

# FLIGHT

The  
AIRCRAFT ENGINEER  
AND AIRSHIPS

First Aeronautical Weekly in the World. Founded January, 1909

Founder and Editor : STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 1098. (No. 2. Vol. XXII.)

JANUARY 10, 1930

Weekly, Price 6d.  
Post free, 7d.

Editorial Offices : 36, GREAT QUEEN STREET, KINGSWAY, W.C.2.  
Telephone : Holborn 3211. Telegrams : Truditur, Westcent. London.

Annual Subscription Rates, Post Free.

United Kingdom .. 30s. 4d. Abroad .. 33s. 0d.\*

\* Foreign subscriptions must be remitted in British currency. (See last Editorial Page.)

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## EDITORIAL COMMENT



**T**AKING it all round, the year 1929 must be put down as a fairly good one for aviation. From a financial point of view, there may have been a good deal of room for improvement. The industry, as a whole, cannot yet, by any means, be regarded as being in a "flourishing" state. The system in force of placing orders spasmodically, instead of spreading them over a period of years, with consequent disorganisation, interruption of work, loss of time, and waste all around, has not yet been adequately remedied, and until it is, the British aircraft industry, the greater portion of which still relies mainly upon the Air Ministry for orders, cannot be expected to attain the smooth and continuous working which alone can ensure the successful application of ordinary business methods.

From a technical point of view, however, 1929 has been one of the most interesting in the history of aviation, certainly of post-war aviation. At home, the year has been marked by the production of quite a large number of new types of aircraft, while abroad, this has been augmented by the completion and initial flying tests of heavier-than-air craft, larger by far than any hitherto built. Concerning the latter, it is too soon to form an opinion of the extent to which the new large machines are, as they stand, likely to be perpetuated as practical types. That they have been, and are, intensely interesting from a technical point of view, none will deny.

Space does not permit of going into great detail concerning the new types which appeared in 1929, but a brief review may be helpful in "taking stock" of the situation at the beginning of the new year. On the service side, although quite a number of aircraft types have been produced in the various classes, it is probably true to say that greater steps forward have been made with the single-seater fighter than with any other class. The advance in performance has been extremely gratifying, although Air Ministry restrictions prevent us from backing up this statement by actual figures. There was a time

### DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

1930	
Jan. 22	.... "The Strategical Mobility of Air Forces," Lecture, by Gp.-Capt. C. L. Courtney, before Royal United Service Inst.
Feb. 5	.... Banquet, Royal Aero Club. in conjunction with R.Ae.Soc., Air League of the British Empire, and Soc. Brit. Aircraft Constructors, at Savoy Hotel.
Mar. 5	.... "Air Co-Operation with Mechanised Forces," Lecture, by Wing-Com. T. L. Leigh- Mallory, before Royal United Service Inst.
June 28	.... Royal Air Force Display, Hendon.
Sept. 6-28	.... Aero Exhibition, Stockholm, Sweden.
Nov.	.... Paris Aero Show

when Great Britain was lagging somewhat behind with the single-seater fighter, but the last year has seen that shortcoming remedied, as far as experimental types are concerned, although it cannot yet be claimed that all the R.A.F. Fighter Squadrons are equipped with the most up-to-date machines which the industry could give them. But the fact that machines with excellent performance exist as experimental types proves that whenever the authorities concerned come to a decision, there is no difficulty, from the manufacturers' side, in producing equipment for the Fighter Squadrons which will place them well ahead of the corresponding units of other nations. Other classes of aircraft have been developed also during the past year, but the most intense work has been done on the single-seater fighter class, and the results have been correspondingly good in that class.

On the civil side, the year has seen the introduction of a large number of types, some of which have already gone into quantity production as standardised types, while others are still, to a great extent, in the experimental stage.

In the two-seater light 'plane class, there has not been a great deal of development, due, doubtless, to the fact that this class of machine is already well established. This is not to say that the class has not been successful. On the contrary, the British type of two-seater light 'plane leads the world, and has been sold in increasing numbers during the past year. But its development, technically, is already fairly complete, and except for detail refinements, the class has not produced anything startlingly new. Before leaving this class, however, reference may be made to a new type of two-seater, the experimental model of which has been flown a good deal, and with rather remarkable results. This machine, a monoplane, has been fitted with an "inverted" engine, and has been found to have a performance greatly superior to that of the biplane type of the same power, which it was designed to supplement. This increase in performance cannot be accounted for merely by the change from biplane to monoplane, but must be regarded as being very largely due to a reduction in the interference between the wing and fuselage, etc., and to the better streamline flow around the whole machine. The new type, in fact, goes quite a long way towards Professor Melvill Jones' "ideal streamline aeroplane," and this fact goes to show that we may still hope for considerable improvement in aerodynamic efficiency, even if no revolutionary discoveries are likely to be made.

In the low-power, single-seater light 'plane class, there has been quite a crop of new types. None can be said yet to have entirely proved itself, nor to have gone into mass production as a standardised machine, but some very interesting experimental types were among those produced, and the present year will decide whether or not there is a market for this class of machine, a class which has been called "the motor-cycle of the air." Apart from the fact that the initial cost is low, and the running cost and upkeep also very low, and that, therefore, the class should appeal to many who cannot afford the price of the two-seater light 'plane of greater power, there is a considerable need for a cheap machine on which pilots who have obtained their "A" licence can "pile up hours" in order to qualify for their "B" licence. And as time goes on, the vacancies for pilots with the requisite number of flying hours will increase, and the need for cheap practice machines will grow more acute.

The "feeder line" type of machine, *i.e.*, the small passenger-carrier class, has received quite a number of additions during the year. Some of these have already gone into fairly general use, while others will doubtless do so during the present year.

When one comes to the large commercial class of machine, the year has been less satisfactory as regards new types. Imperial Airways have, in the main, carried on with types already in their possession at the end of 1928, although new versions of the types have been acquired. But there has not been in evidence that determination to explore further possibilities which one could have wished. However, several new types are now under way in various works, and will make their first appearance during the early summer, or even the spring of this year. The seaplane, in flying-boat as well as twin-float form, is receiving a goodly share of attention, and this is all to the good. As FLIGHT has maintained for many years, the British Empire *must* develop the seaplane to the utmost of its ability. But that is not sufficient. Other types also call for exploration and development, and we cannot afford to neglect any type of machine which gives any promise of bringing us nearer to the day when civil aviation can "fly by itself." Among the types which, in our view, urgently need consideration, is the out-and-out mail-carrier. The British policy has hitherto been to rely, on the Empire air route, very largely on passenger traffic. Mails have been carried, certainly, but not in anything like the quantities which should be available. And that is very largely due to the policy of making one type of machine serve both for passengers, mails, and to some extent, goods. We have come to the parting of the ways, and the mailplane is, it seems to us, the type which offers most prospects of immediate success. A single-engined type will probably suffice, and a very efficient machine could be designed, with a cruising speed much higher than that of the passenger machine. The saving in time that would result from the use of such machines would do much to popularise the regular use of the air mail.

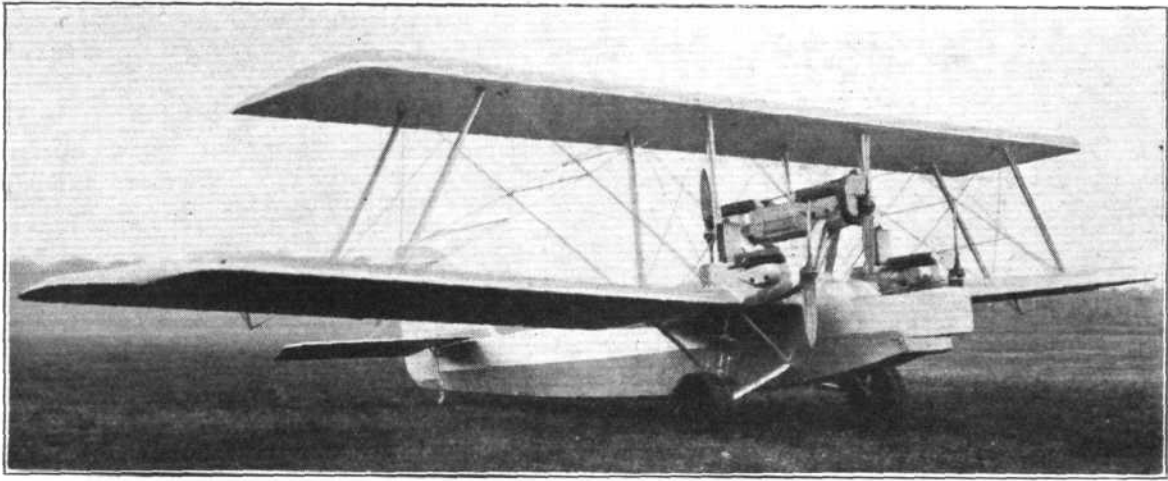
In racing aircraft Great Britain has produced, during 1929, the two types built for the Schneider contest, and both were very remarkable machines, although engine trouble prevented one type from taking part in the contest.

With the progress made with aero engines during the past year, Great Britain has every cause to be satisfied. The lead established in previous years has been well maintained, while some new types have been produced which will add, during 1930, very materially to that lead.

And then there are the airships. Whether or not the airship ultimately attains the position which its advocates expect, the completion of the two largest airships in the world is an achievement which is at least of very high technical value, and many of the results of which may be expected to be applicable to branches of aircraft engineering outside the immediate sphere of airship work.

#### ♦   ♦   ♦ OUR THANKS

So many readers have written to us in terms of praise, concerning the Birthday Number of FLIGHT last week, that it is quite impossible for us to reply by post, and we would ask them to accept our sincere thanks for their kind appreciation.



## THE CAPRONI Ca.79

### An Italian Bombing and Torpedo 'Plane

CAPRONI is a name usually associated with "giant" aeroplanes, for the large Caproni triplanes, and even some of the biplane bombers constructed during the Great War by the well-known Italian aircraft firm, were well above the average as regards overall dimensions. While this firm has, subsequently, produced small and medium-size aircraft, it has not forsaken the "big" machine, as may be gathered from the following brief description of one of their recent types, the Ca.79—to say nothing of the Ca.6000 just completed, which is even larger.

The Ca.79, which is a multi-engined Service machine that could no doubt also be adapted for commercial work, is certainly on the large size—although, perhaps, this is not at first apparent from the accompanying photographs—being over 100 ft. in span.

It is a biplane of typical Caproni design *i.e.*, with a large-span lower wing and a short-span upper wing. The latter, it will be noticed, is "straight" and mounted high above the boat-like fuselage to which the lower 'plane, set at a dihedral angle, is attached by way of short centre sections. Top and bottom 'planes are separated by four pairs of struts, and are of fairly thick section. Balanced ailerons are fitted to the lower 'plane only.

The Ca.79 is of metal construction (steel and duralumin) with fabric covering for the wings and part of the fuselage. The main wing spars are built up of sheet steel, and the ribs and leading edges of duralumin, while internal bracing is of steel wire and tubing. The monoplane tail 'plane is of steel tube construction, and both the vertical and horizontal stabilising surfaces are adjustable during flight; the rudder is balanced, but not the elevator.

Steel tubing is employed for the fuselage, and the forward portion is covered with sheet duralumin. The pilots'

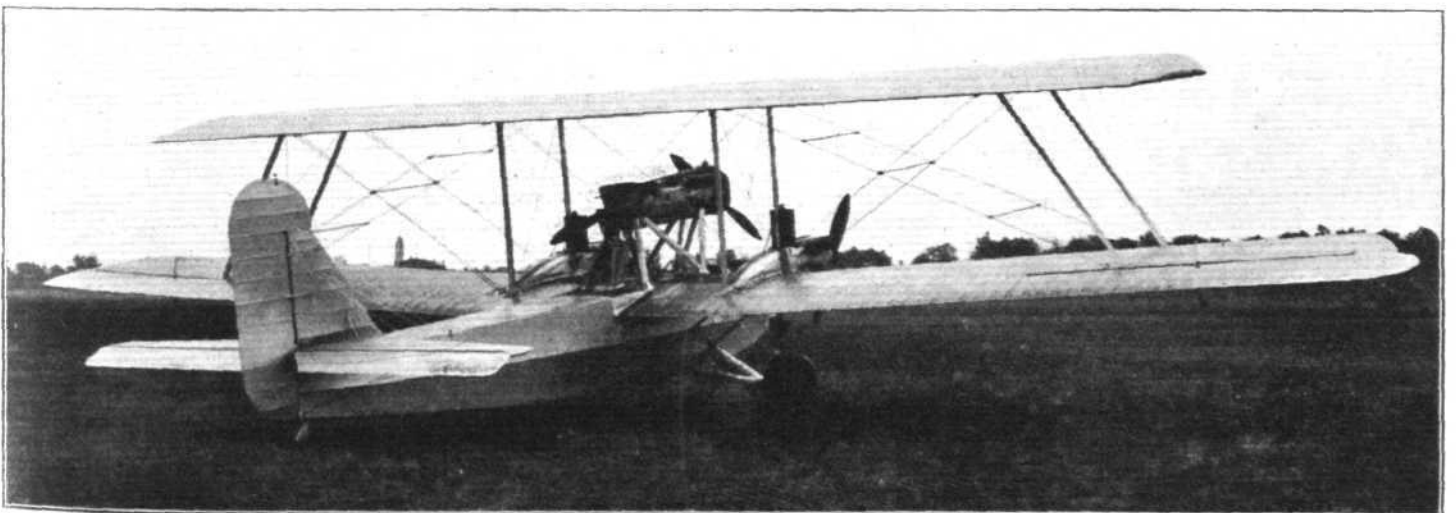
cockpit, equipped with the usual Caproni dual control, is situated at the leading edge of the lower 'plane, where an excellent view all round is obtained. In the nose is a gunner-bomber's cockpit, while at the rear of the wings is a second gunner's or observer's cockpit. A central passage in the fuselage communicates with all three cockpits, access to which is by means of two doors on the left-hand side.

The front cockpit is provided with a machine gun mounting as well as the bomb-release controls, which are electrically operated; the bombs are carried, either outside or inside the fuselage, beneath the lower wing, and comprise four 500-800 kg. bombs, or 32 of 100 kg., or torpedo. The second machine gun in the rear cockpit has a wide range of fire both vertically and sideways, while a third gun is mounted in the floor of the fuselage firing downwards and being completely retractable when not in use.

The Ca.79 is equipped with four Isotta-Fraschini "Asso" engines of 500 h.p. each. Two of these are mounted centrally in tandem on a strong cabane above the fuselage, between the top and bottom planes. The other two are mounted on the lower plane centre sections, one on each side of the fuselage and projecting a little way beyond the leading edge and driving tractor airscrews.

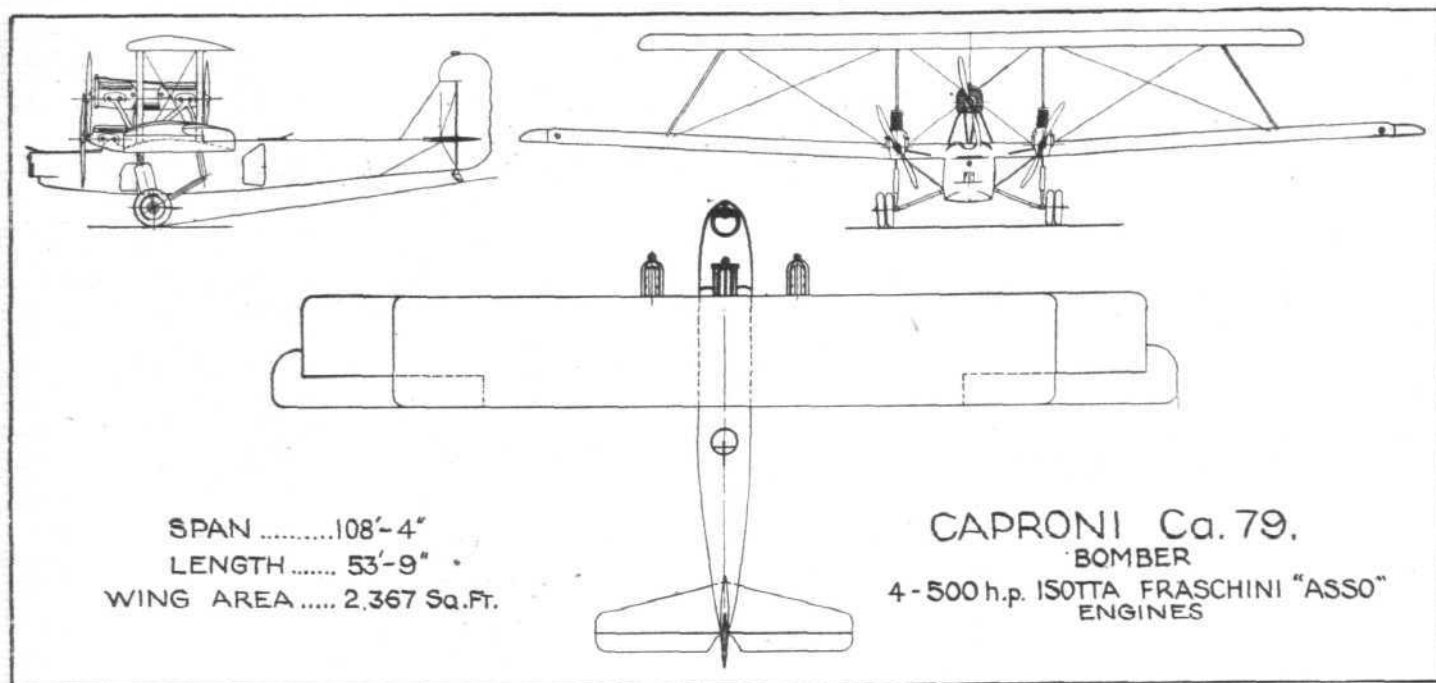
All four engines are extremely accessible and, we believe, easily removed for replacement or overhaul.

An exceptionally strong undercarriage, of the divided or non-axle type, is provided. It has twin wheels, each pair being carried on a well-faired V-member hinged to the lower fuselage longerons. Landing shocks are taken by a vertical shock-absorber member extending up from the wheels to the centre section front wing spar. The tail skid is steerable.



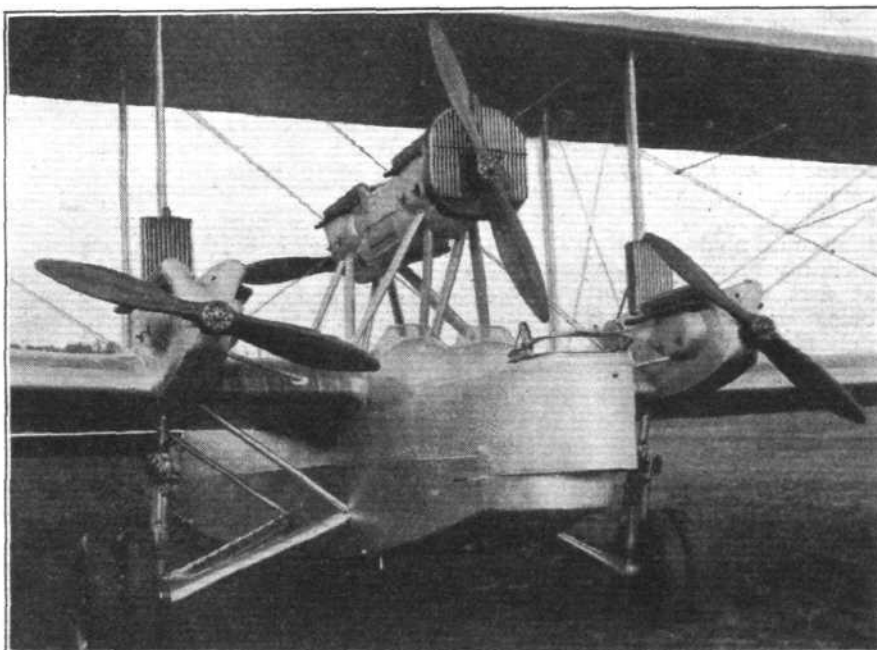
THE CAPRONI CA.79 : A recent Italian bombing biplane, equipped with four 500-h.p. Isotta-Fraschini "Asso" engines. As will be seen from the two views above, the planes are arranged in typical Caproni fashion—"the higher the smaller."





The principal characteristics of the Caproni Ca.79 are:—

Span (maximum)	108 ft. 4 ins. (33 m).
Chord .. ..	13 ft. 2 ins. (4 m).
Gap .. ..	13 ft. 2 ins. (4 m).
Overall length ..	53 ft. 9 ins. (16.40 m).
Height .. ..	23 ft. (7.01 m).
Wing area ..	2,367 sq. ft. (220m <sup>2</sup> ).
Area of tail plane	170 sq. ft. (15.79 m <sup>2</sup> ).
Area of fin ..	110 sq. ft. (10.22 m <sup>2</sup> ).
Area of elevators	70 sq. ft. (6.50 m <sup>2</sup> ).
Area of rudder ..	55 sq. ft. (5.11 m <sup>2</sup> ).
Weight empty ..	14,332.5 lbs. (6,500 kgs.).
Useful load ..	9,922.5 lbs. (4,500 kgs.).
Total weight ..	24,255 lbs. (11,000 kgs.).
Weight per h.p.	12.12 lbs. (5.50 kgs.).
Wing loading ..	10.25 lbs./sq ft.. (50 kg./m <sup>2</sup> ).
Speed range ..	56-118 m.p.h. (90-190 k.p.h.).
Climb in 40 mins.	13,100 ft. (4,000 m.).
Ceiling .. ..	15,100 ft. (4,600 m.).



THE CAPRONI CA.79 : This view shows the arrangement of the four Isotta-Fraschini engines, and the under-carriage.

## THE GUGGENHEIM SAFE AIRCRAFT COMPETITION

THE outcome of the Guggenheim Competition is that the Curtiss "Tanager" has been awarded the prize of £20,000. There is dissatisfaction over this result as the Curtiss machine gained the prize by virtue of the Handley Page slots, with which it was fitted but for which no licence had been granted.

The rules were very elastic and machines which arrived, even as late as November 18, were admitted, and during the progress of the test alterations were made which improved the chances of certain machines which would not otherwise have stood a chance of qualifying.

The Handley Page entry, the "Gugnunc," failed on the slow glide, without engine. The maximum speed for this was set at 38 m.p.h., a figure which was reached during tests at Martlesham Heath, but during the competition a figure of 39.7 was quoted as the best achieved. In this machine the slots and the flaps were all automatic in action, whereas the Curtiss entry had positively operated flaps and automatic slots. Mr. Handley Page has instituted an action against the Curtiss Co. for infringement of his patents, and as a counter-action the Curtiss Co. have served a writ upon Maj. Cordes, Mr. Handley Page's representative, restraining him from dismantling the "Gugnunc," because they assert that the

Handley Page Co. was, by a Court order granted in 1921, prohibited from importing aeroplanes into the U.S., and in stopping the dismantling they are preventing the destruction of evidence that the order has been violated. Their defence in the original action is that they fitted slots for experimental purposes, and, when the question of producing the machine commercially arises, they would apply for a licence.

The competition was a duel of these two machines, as none of the others passed the preliminary tests. Mr. Handley Page expressed regret on this point as he said that at the outset they had announced that they were not willing to issue licences for any competitors to use slots, as in their opinion the competition should be between different types and not between different applications of one patent. Whatever is the outcome of the actions it has been a triumph for the Handley Page slotted wing, and both machines have shown that the slotted wing can be designed as a means of obtaining lift and not merely as a means of retaining control after the stall. The "Gugnunc," with a wing loading of 7.4 lbs./sq. ft. and a power loading of 13.8 lbs./h.p., achieved almost the same performance as the "Tanager," whose figures were 8.4 lbs./sq. ft. and 15.6 lbs./h.p.

# ROYAL AERONAUTICAL SOCIETY AND "FLIGHT"

## Complimentary Dinner to Mr. Stanley Spooner

"I WANT you to feel that this is just a family party during Christmastide (which, I may remind you, in case you were surprised at seeing the decorations, does not end till twelfth night) at which friends have come together to mark the coming-of-age of the oldest regular weekly aeronautical publication in the world, and, what is, no doubt, of greater importance to us here, to show in a distinctive personal way our admiration for a modest and retiring friend—the founder and editor of FLIGHT."

With these words Col. the Master of Sempill, President of the Royal Aeronautical Society, opened his speech on the occasion of the dinner in honour of Mr. Stanley Spooner, founder, proprietor and editor of FLIGHT, given at the Savoy Hotel on January 3. A large number of friends of Mr. Spooner and of FLIGHT had gathered to celebrate the twenty-first anniversary of this journal, among them many of the old-timers of British aviation.

Col. the Master of Sempill was in the chair, and in proposing the toast of FLIGHT, coupled with the name of Mr. Stanley Spooner, he said that a number of telegrams and messages had arrived from prominent people. The Patron of the Royal Aeronautical Society, H.R.H. the Duke of York, had sent a message asking Col. Sempill to convey his sincere good wishes to Mr. Stanley Spooner, whose paper FLIGHT had been privileged to receive a special message from the Duke. The Air Minister, Lord Thomson of Cardington, had sent the following message: "Please convey my very cordial congratulations to that veteran of aeronautical journalism, Mr. Stanley Spooner, on the 21st anniversary of FLIGHT. Mr. Spooner's courage, foresight, and energy have been invaluable in the development of British aviation." The Duke of Argyll also sent best wishes. The chairman said he would not read all the messages, as he wished to spare Mr. Spooner's blushes.

Col. Sempill said that he was glad to see there that evening so many of the pioneers, designers, constructors, and pilots. That their great work had eventually been recognised was largely due to the never-flagging energy of Mr. Spooner. He did not think he could do better than to quote a passage from a letter sent by Sir Francis McClean, who had wished to be present. In that letter Sir Francis said: "Those of us who passed through the 1909-1910 days know the value of his work at that time, and, for that matter, since, when a little sympathy was very pleasant among a lot of crashes." That sentence struck exactly the right note—sympathy. Mr. Spooner was very sympathetic.

Let them go back, the chairman said, for a moment and imagine the difficulties which had to be faced in the early days. He read the following extract from a London contemporary of 1909: "There is quite a boom at present in aeroplane matters. Of course, it is always nice to see people enthusiastic about new undertakings in which they think they are interested. . . . Even in warfare, where so many important claims are made for the aeroplane, the low elevation of flight of the latter and the excellent target the driver would make for the marksman almost restrict the use of such an appliance to night time."

Another contemporary wrote in 1910: "We can scarcely say that FLIGHT has all the world before it where to choose, because, although for the present printed on solid earth, below, its 'sphere' is the upper world, the empyrian, and may some day shift its place of publication to N.1, Red Avenue, Mars, with district correspondents on the edge of the crater Copernicus, on the moon's face, and other coigns of vantage well out of the way of militant socialists and land taxes. The vivid picture of an airship in the clouds, which adorns the first page, is admittedly 'faked,' but he would be a foolish man who would wager that he would not live long enough to see it in reality. This flying business is a bit uncanny, especially when the thing comes to grief."

The chairman also recalled a letter from the Vice-president of the R.Ac.S. (Lieut.-Col. Moore-Brabazon) which appeared in the first number of FLIGHT, and in which "Moore-Brab" referred to the difficulties of furthering aviation in this country, "where everyone is so ready to discourage one, ridicule one, and look upon one as an amiable lunatic." They should follow Mr. Spooner's example and think of others who had helped through the difficult years. For example, the editor of what, he thought, Mr. Spooner would probably call "our distinguished contemporary," Mr. C. G. Grey, was present. Mr. Grey, he recalled, was editor of the *Aero*, owned by Sir Edward Iliffe, many years ago,

and in 1911 he founded *The Aeroplane*. Maj. C. C. Turner, another old-timer among aeronautical journalists, had contributed a weekly article to the *Observer* from 1908 to 1924 without a single break. He watched all the early pioneers, and was the first journalist to loop the loop with Gustav Hamel in 1914. He was also the first journalist to get his pilot's certificate, and long before that he was a skilled balloonist and held a world's record for distance. Harry Harper, of the *Daily Mail*, was another aviation writer associated with flying since the earliest days. Unfortunately, his digestion did not permit him to partake of banquets, and so he was not present that evening. Then again, the chairman said, he ought to mention a past-president of the Society, Maj. Baden-Powell, who, when editor of *Knowledge*, began an aeronautical supplement which developed into the journal *Aeronautics*, with John Ledeboer as editor, with whom was associated Wing-Comdr. Hubbard.

Colonel Sempill then referred to other early writers present at the dinner, and who went to report the Rheims meeting in 1909. Among them was Mr. Hamilton Fyfe and Mr. Berri-man, who was the first technical editor of FLIGHT. He regretted that Mr. Edgar Wallace was not able to be present. Probably it came as a surprise to most of them that Edgar Wallace was among those who reported the Rheims meeting. His absence that evening was probably dictated by a desire to catch up with "John Lawrence," otherwise Captain Pritchard, their trusted secretary, who was contributing articles on aviation as early as 1909. Before sitting down, Colonel Sempill said he wanted to express to Mr. Spooner, Mr. Poulsen and the other members of FLIGHT's staff, the Society's gratitude for their unflinching courtesy and support. In days gone by, when the Society was not so well off financially, FLIGHT used to let them have the loan of blocks and photographs free of charge. Notices of the proceedings of the Society, and the proceedings themselves, had been published in full, to the benefit of the paper and of the society from the very first issue up till the present time.

"In the first issue," the chairman concluded, "was published the paper around which so much controversy had raged—Dr. Lanchester's on the Wright and Voisin types of flying machine. Therefore I would say to you, in proposing the toast of the coming-of-age of FLIGHT, coupled with the name of Stanley Spooner, that as sixth president of the Royal Aeronautical Society—which will complete its 64th year in a few days' time—I offer you the cordial thanks of the Society and, may I say, of the aeronautical community for what you have done, and say that we look—I hope not in vain—for your active and continued assistance."

Lieut.-Col. J. T. C. Moore-Brabazon, Vice-President of the Royal Aeronautical Society, in seconding the toast, said that all he had to do after the chairman's speech was to "dot the i's and cross the t's." They were thankful to have been associated with Mr. Spooner from the earliest days. He personally could speak feelingly on the subject as he was a "frontispiece" in the first number of FLIGHT. He first met Mr. Spooner 26 years ago on the Committee of the Automobile Club, where he (Moore-Brabazon) was one of the bolshevist members. Mr. Spooner, he said, would regard them with his benevolent smile, but under the table he was kicking Moore-Brabazon's leg. He next met Mr. Spooner in the old FLIGHT office in St. Martin's Lane. That was one of the most extraordinary offices he had ever seen. It was more like a huge pantomime waste paper basket in the middle of which sat Mr. Spooner. He looked for all the world like a large old hen, hatching the egg of aviation. He (Moore-Brabazon) was one of the chickens hatched.

If he might without being accused of advertising any particular firm, refer to the earlier volumes of FLIGHT, he would say that they read like a fairy tale. With reference to the Birthday Number of FLIGHT, it was extremely gratifying to find that messages had been received from all the corners of the world. Now FLIGHT was 21 and of age, and that brought with it responsibilities and thoughts of bank books and bank balances. They now had to pass from play to work. The British aircraft constructors sought world-wide markets, and upon what were they to rely if not on their two technical papers to act as ambassadors? In other industries the tendency was towards amalgamation. He hoped, however, that there would be no amalgamation of FLIGHT and *The Aeroplane*. He liked to regard that gathering not as marking a single step but as marking a definite stage in the progress of flying. In conclusion he was very glad that Mr. Spooner



had not, like so many pioneers, been forgotten by his own generation.

Mr. Stanley Spooner, in replying to the toast, showed considerable emotion, as those who know his retiring nature and just how much FLIGHT has meant and does mean to him would expect. He said he hoped his blushes had not been too marked, and that his great trouble was that as soon as he got on his feet to speak he was rendered almost speechless. He could not help thinking what a blessing it would be when men like him need only to stand up and make faces, and a sort of "canned talkie" behind him delivered the words. He would, he said, before everything like to express his intense appreciation of the very kind message which His Royal Highness the Duke of York had sent to him. That His Royal Highness should consider anything Mr. Spooner had done towards helping aviation as fitting for such an honour astounded him, but he was naturally extremely proud and very gratified.

This was the first time, Mr. Spooner said, in the whole of his life, that he had felt equal to "facing the music" for anything he had done, or was alleged to have done. When Capt. Pritchard, the Secretary of the Royal Aeronautical Society, had 'phoned him to know what he would be doing on the evening of January 3, Mr. Spooner had replied that on that evening he hoped to be resting, after the efforts of bringing out the 21st Birthday Number of FLIGHT. Upon being told of the dinner it was proposed to give to him, Mr. Spooner tried to "wriggle out," but as usual, Capt. Pritchard was tenacious, and now Mr. Spooner was very glad that he had come. Obviously, it would have been discourteous in the extreme to refuse to say a few words, much as he feared the task of doing so.

In accepting all the kind things said that evening, Mr. Spooner said he did so, not as an individual, but as the representative of his entire staff, many of the members of which had been associated with him since the earliest days. "My staff," Mr. Spooner said, "refer affectionately to me as 'The Chief,' and any praise given me I willingly accept on their behalf. No paper has had, or could have, a more loyal, willing and helpful staff than those associated with me." Mr. Spooner said he would particularly like to mention Mr. Poulsen, technical editor of FLIGHT, who had been on the staff for more than 18 years, Mr. Vernon Jones, who graduated from the *Auto.* staff, Mr. Prochazka, chief of the art department, Mr. Yoxall, whose splendid photographs would be familiar to most of them, and Mr. Hawkins, the manager of the firm on the commercial side, who joined Mr. Spooner in 1896, and was "still going strong." He would also like to mention Miss Galloway, chief of the office staff, who joined him long before he started FLIGHT, and who had been responsible for his confidential secretarial work, as well as for valuable editorial work.

Harking back to the birth of FLIGHT, Mr. Spooner said he now had to confess that it *did* require a good deal of optimism to start a journal to be entirely devoted to flying. A year or so later he was, however, greatly heartened by receiving from Lord Northcliffe a spontaneous note saying how greatly he thought FLIGHT was helping forward aviation. The note, Mr. Spooner said, was very helpful, if somewhat flattering.

On the other hand, pessimists were terribly prominent. Mr. Spooner recalled one particular case which contained a "moral." A very old friend of his, a shrewd and far-seeing business man, whose genius for organisation was almost phenomenal, wrote to him after FLIGHT had been published a few years, and asked him to discontinue sending FLIGHT every week, as he had no time to read it, or even to open the wrappers. The letter concluded: "Indeed, in writing thus, I would say, as a very old friend, why on earth you are wasting your time, energy and, presumably, substance in carrying on such a paper and campaign is beyond my comprehension. I cannot see or imagine that under any circumstances whatever flying can ever serve any useful purpose, or attain any serious position in the world. Indeed, it is a case of 'beating the air'." Within a few years of this happening, the friend who wrote that letter became, through his organisation, one of the greatest backers of aviation which the industry has so far evolved.

Mr. Spooner recalled how, long before FLIGHT was started he had been recording in his other paper, *The Automotor Journal*, any items relating to aviation which became available. In that paper, on September 13, 1903, appeared the following paragraph: "They (the Wright Brothers) are learning to fly merely by the force of gravity from the top of a hill, against the wind. As Prof. Chanute said, on a recent occasion, 'they have already learnt to fly quite as well as the buzzard.' They are gradually increasing the

lifting power of their aeroplanes, and any day we may hear of their putting on motor and propeller and actually accomplishing free, independent flight. The empire of the air is still to be conquered, but we have certainly got a further glance into the Promised Land than we have ever had before." That was on September 13, 1903. On December 17 of the same year, the Wrights made their first power-driven flight.

After recalling that some years ago he sold *The Automotor Journal* in order to be able to devote the whole of his energies to FLIGHT, Mr. Spooner expressed his very great pleasure at seeing around him so many old friends, with most of whom he had kept in constant touch. He particularly appreciated the presence there of Air Vice-Marshal Sir Sefton Brancker, Director of Civil Aviation, Air Vice-Marshal Sir Vyell Vyvyan, and other members of the R.A.F. He was also very glad to see Sir Edward Iliffe, Lieut.-Col. Moore-Brabazon, the Hon. Alan Boyle, who was one of the earliest pilots, and Dr. Thurston. He saw, to mention but a few, Mr. Handley Page, Mr. Horace Short, Mr. Vane, Sir Alliott V. Roe, Mr. Griffith Brewer, Major Green, Mr. North and Mr. Chadwick. He especially welcomed the presence of Mr. A. E. Berriman, who was FLIGHT's first Technical Editor, and who was lost to aviation through becoming Chief Engineer to the Daimler Company. Mr. Spooner also expressed his great pleasure at seeing some old friends of the journalistic fraternity, such as Major C. C. Turner, and Mr. Massac Buist. The presence of another very old friend, Mr. Charles Grey, Editor of *The Aeroplane*, might possibly be suggestive of the lion and the lamb. Mr. Spooner said he would leave the "casting" of the characters to the company! Finally, Mr. Spooner concluded by again thanking them for the great honour which, he repeated, they had done the entire FLIGHT staff through him.

Mr. C. G. Grey said it was a very real pleasure to him to be present and do honour to his old friend Stanley Spooner. He was rather reminded of the story of the little boy who, on being seen playing by himself was asked if he had no little friends he could play with, and who then answered: "Yes, I have one, but I hate him." He had only one enemy, Stanley Spooner, and he loved him. He was sure they owed a very great deal to Mr. Spooner—perhaps even more than was yet realised—and he could not imagine how Mr. Spooner had managed to struggle through the early years almost without advertising support. He expressed the hope that in the future the regular weekly numbers of FLIGHT would be as great as the Birthday Number. Of course, he would not mind if *The Aeroplane* was equally great! He shared Col. Moore-Brabazon's hope that there would be no amalgamation of the two papers. Competition was good for trade, and he hoped that the two papers would remain rivals, friendly rivals, for many years to come.

Air Vice-Marshal Sir Sefton Brancker proposed the toast of the Chairman. Colonel Sempill, he said, was his second in command during the war, and did all the work and had all the brain-waves for which he (Sir Sefton) got the credit.

It being discovered that the Hon. Mrs. Sempill was in the hotel, Colonel Sempill called upon his wife to reply, as she had been responsible for the decorations. (These were extremely charming, as might be expected from the artistic daughter of the great artist, Sir John Lavery.—Ed.) The Hon. Mrs. Forbes Sempill replied very briefly by thanking them for their kind reception of her, and for their appreciation of her decorative efforts, and a memorable evening—memorable as far as FLIGHT and its editor and staff are concerned—came to a close.

Among those who accepted invitations were:—

In the chair: Col. the Master of Sempill, A.F.C., A.F.R.Ae.S. (President, The Royal Aeronautical Society). Guest of Honour: Stanley Spooner, A. E. Berriman, O.B.E., M.I.A.E., F.R.Ae.S.; the Hon. Alan R. Boyle, A.F.C., A.F.R.Ae.S.; M. L. Bramson, F.R.Ae.S., M.I.A.E.; Air Vice-Marshal Sir W. Sefton Brancker, K.C.B., A.F.C.; Griffith Brewer, F.R.Ae.S.; H. Massac Buist; R. Chadwick, A.F.R.Ae.S.; Lieut.-Comdr. C. N. Colson, A.R.Ae.S.I.; Geoffrey Dorman; A. R. Fenn; Hamilton Fyfe; Maj. F. M. Green, O.B.E., M.Inst.C.E., F.R.Ae.S.; C. G. Grey; Sqdn.-Ldr. R. A. de H. Haig, A.F.C., A.F.R.Ae.S.; C. W. Hayward; H. Hemming, A.F.C., A.F.R.Ae.S., F.R.G.S.; J. E. Hodgson; R. L. Howard-Flanders, A.F.R.Ae.S., M.I.A.E., A.M.I.Mech.E.; Wing-Comdr. G. B. Hynes, D.S.O., R.A.F.; Sir Edward M. Iliffe, C.B.E.; F. H. Jones; Capt. A. G. Lamplugh, F.R.Ae.S., M.I.A.E.; Capt. Norman Macmillan, M.C., A.F.C., A.F.R.Ae.S., M.I.A.E.; W. O. Manning, F.R.Ae.S.; Lieut.-Col. W. Lockwood Marsh, O.B.E., M.A., A.F.R.Ae.S.; Capt. F. Warren Merriam, A.F.R.Ae.S.; G. Merton, M.C., M.A., Ph.D., F.R.A.S.; Lieut.-Col. J. T. C. Moore-Brabazon, M.C., F.R.Ae.S., M.I.A.E.; J. D. North, F.R.Ae.S., M.I.A.E.; F. Handley Page, C.B.E., F.R.Ae.S.; H. Victor Paine; J. Lankester Parker, A.F.R.Ae.S.; C. M. Poulsen; Capt. J. Laurence Pritchard, Hon. F.R.Ae.S.; H. O. Short, F.R.Ae.S.; O. E. Simmonds, A.F.R.Ae.S., M.I.A.E.; Capt. Geoffrey Smith, M.B.E.; A. M. H. Solomon; Harold Solomon; T. Stanhope Sprigg; A. P. Thurston, D.Sc., M.B.E., F.R.Ae.S., M.I.A.E., M.I.A.E.; Lieut. Col. N. G. Thwaites, C.B.E., M.V.O., M.C.; Maj. C. C. Turner, A.F.R.Ae.S.; H. T. Vane, C.B.E.; Sir Alliott Verdon Roe, O.B.E., F.R.Ae.S., M.I.A.E.; Air Vice-Marshal Sir Vyell Vyvyan, K.C.B., D.S.O.; Capt. W. T. S. Williams, D.S.C., R.A.F. (retd.).

# THE "WASP JUNIOR"

## A New Pratt and Whitney Engine of 300 h.p.

A NEW 300 h.p. nine-cylinder air-cooled radial aircraft engine to be known as the "Wasp Junior," has been extensively tested, and will be put on the market soon by the Pratt and Whitney Aircraft Company, of Hartford, Conn. This step marks a radical departure from the policy of the company, which since its inception four years ago, has devoted all its energies to the high-powered aircraft engine field.

The new model, which is of 985 cub. in. displacement, weighs 550 lbs., and is 45½ in. overall in diameter. It is essentially the "Wasp" engine with a new power section, and is rated at 300 h.p. at 2,000 r.p.m. It has an equal bore and stroke of 5⅝ in.

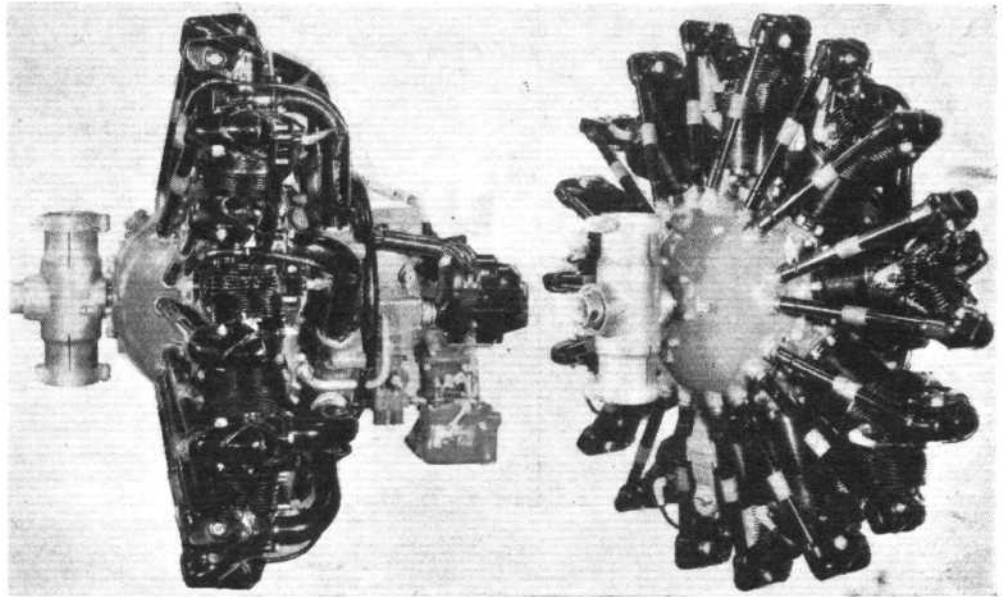
The new engine was brought out to meet the requirements for an engine of this size having the dependability and long life that have made the "Wasp" and "Hornet" so well known. It incorporates all of the features of the "Wasp" and "Hornet" and by standardisation of design 80 per cent. of the parts are interchangeable. Even the mounting dimensions are identical. Due to the use of so many of the tried and proven parts of the "Wasp" engine, none of the difficulties usually encountered in bringing out a new model have been experienced, and it is expected it will equal the same record for reliability and performance attained by the "Wasp" and "Hornet," which between them have established 12 world's records for speed, range and endurance, which covers practically the entire field of aeroplane performance.

Types of planes which will be able to utilise the "Wasp Junior" will include, among others, the four and five passenger cabin planes, the two and three place open commercial planes of high performance characteristics, the light cargo carrier used on feeder lines, the smaller sport

amphibian and tri-motored transports of the smaller type. The "Wasp Junior" is also expected to have an interesting military and naval application for small high-performance aircraft.

### Technical Details

It is an interesting fact that the use of the "Wasp"



THE PRATT AND WHITNEY "WASP JUNIOR": Side and three-quarter front views of the new engine. It is rated at 300 h.p. at 2,000 r.p.m., and has a bore and stroke of 5⅝ in., with a displacement of 985 cu. in.

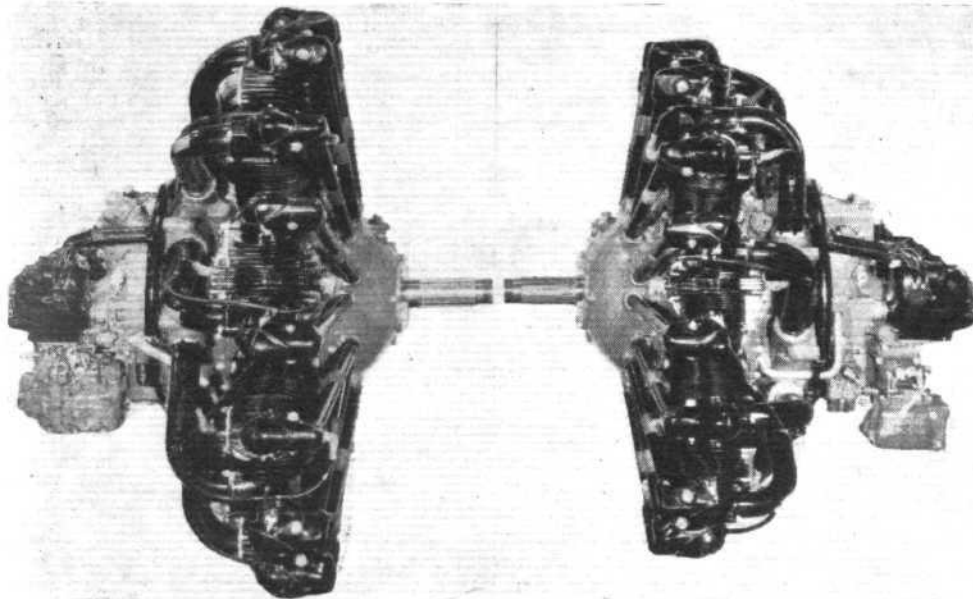
parts has caused but little increase in weight. The accompanying photographs show the similarity and relative proportions of the "Wasp Junior" and the "Wasp." In addition to being geometrically similar, the same materials are used and the same control and care in manufacture are exercised as in the "Wasp."

Due to the use of the standard rear crankcase section, the engine has the same mounting circle as the "Wasp," which should prove a very valuable feature to the aircraft manufacturer, who desires both a 300 and a 420 h.p. engine. Like the "Wasp" and the "Hornet," the "Wasp Junior" is available with airscrew reduction gears.

In addition to bringing out the "Wasp Junior" the Pratt and Whitney Aircraft Company will have manufactured approximately 200 "Wasp" and "Hornet" engines a month during the year 1929 as compared with 65 engines a month in 1928.

The company claims to be the largest manufacturer of high-powered engines in the world.

The total mileage of Pratt and Whitney engines flown daily on regularly-operated transport lines carrying passengers, mail, and express, approximates 68,000 miles. This is an interesting figure when it is realised that only 91,000 miles are scheduled to be flown daily by regular operators. Two companies alone—The Pan-American Airways System and the Boeing System—using "Wasp" and "Hornet" engines exclusively, fly approximately 20,000 miles daily. The



A full side view comparison of the "Wasp" (left) and the new 300 h.p. "Wasp Junior" (right). The new "Wasp Junior" as can be seen from the photograph, incorporates all of the features of its larger brother the "Wasp" (and also the "Hornet"), and by standardisation of design 80 per cent. of the parts are interchangeable. The "Wasp" has a commercial rating of 420 h.p. at 2,000 r.p.m., with a weight of 775 lbs. The "Wasp Junior" has a commercial rating of 300 h.p. at 2,000 r.p.m., with a weight of 550 lbs.



Boeing System, which has used Wright engines exclusively since its inception, has flown 7,000,000 miles.

The new plant in East Hartford, Conn., which should be completed by January, 1930, will, it is claimed, be the largest and most modern engine manufacturing unit in the world. Production facilities will be increased 100 per cent. The new plant will contain approximately 500,000 sq. ft., and will cost \$2,000,000. A new plant is also being erected alongside the Pratt and Whitney unit for the Chance Vought Corporation, manufacturers of the Vought "Corsair." It will cost in the neighbourhood of \$1,000,000. When completed manufacture of Vought 'planes will be discontinued at the Long Island City plant, and the entire personnel and equipment moved to East Hartford.

The Pratt and Whitney Aircraft Company is a division of the United Aircraft and Transport Corporation of New York City, of which Mr. Rentschler is also President. Other companies are Boeing Airplane Company, Boeing Air Transport, Inc., Seattle; Pacific Air Transport, Seattle; Chance Vought Corporation, Long Island City, N.Y.; Hamilton Standard Steel Propeller Company, Milwaukee

and Pittsburgh; Northrop Aviation Corporation, Burbank, Calif.; Sikorsky Aviation Mfg. Corp., Bridgeport; Stearman Aircraft Company, Wichita; Stout Air Services, Inc., Dearborn, Mich.; United Aircraft Exports, Inc., New York City.

#### Specifications

The following are the specifications of the Wasp "Junior" 300 h.p. radial air-cooled engine—

Type	.. ..	Air-cooled fixed radial.
Number of cylinders	.. ..	9.
Bore	.. ..	5 $\frac{1}{8}$ in.
Stroke	.. ..	5 $\frac{1}{8}$ in.
Displacement	.. ..	985 cub. in.
Guaranteed power at 2,000 r.p.m.	.. ..	300 h.p.
Weight	.. ..	550 lbs.
Length overall	.. ..	41 $\frac{3}{32}$ in.
Diameter	.. ..	45 $\frac{3}{32}$ in.
Propeller hub	.. ..	Standard S.A.E. No. 30.
Fuel consumption at 300 h.p.	.. ..	0.55 lbs./h.p./hr. max.
Oil consumption	.. ..	0.025 lbs./h.p./hr. max.

## "THE ROYAL AIR FORCE QUARTERLY"\*

IT was quite time that the Royal Air Force should possess a quarterly review of its own, compiled on the lines of the excellent reviews which have hitherto been devoted to the interests of the older fighting services. Sqdn.-Leader Burge and Messrs. Gale and Polden, Ltd., the combination which produced the *Air Annual of the British Empire*, have set themselves to meet this want, and their first issue is of such excellent quality that to give a true opinion about it might seem like fulsome flattery.

In the first place its turn-out is pleasing. The cover is in a blue-grey, suggestive of the sky, inscribed with the badge of the R.A.F., and bordered by the colours of the R.A.F. tie. Nothing could be better than the effect of this combination. The paper and printing are good, and the photographs and line drawings are reproduced in a style which could hardly be improved. In particular the two coloured plates of the Gloster-Napier 6 and the Supermarine-Rolls Royce S.6, and the two photogravures of flights of Fairey 3 F. machines over Aden, are really beautiful pictures.

The letterpress is divided into the following classes: (1) Personnel, Organisation and Administration; (2) Operations and Intelligence; (3) Research and Technical Development; (4) Air Force Notes; (5) History and Travel; (6) Short Stories; (7) Civil Aviation. In each class there is a happy blending of articles bearing directly on air force subjects, and more general articles which will certainly add to the store of useful knowledge of any air force officer, while at the same time interesting a thoughtful reader in any walk of life.

It is appropriate that the first issue should open with an article on "Service in the Royal Air Force," in which Air Vice-Marshal Sir Philip Game, gives a full analytical account of the service. In "Some Notes on Preparing for the Staff College," Sqdn.-Leader R. Graham sums up the matter by saying epigrammatically that the work of preparation for Andover falls under three heads—reading, writing and thinking. No greater compliment could be paid to Andover. Would that the same could be said of all examinations! A universal acceptance of this epigram would solve well nigh all our educational problems. That very important subject "Leadership" is analysed by Maj. K. M. Loch, of the Royal Artillery. One of his striking reflections is, "Wellington did not hob-nob with his private soldiers, and we can hardly picture Cromwell as the life and soul of a riotous guest night. Yet, despite this seeming lack

of the milk of human kindness their armies paid them perhaps the very highest compliment they could by bestowing nicknames on them." The opinions of a soldier on this point will be of particular interest to air force officers, because from them two distinct kinds of leadership are demanded, namely, leadership of pilots, who are mainly their messmates and who fight beside them, and leadership of aircraftmen, who do not fight beside them, but often have to endure agonies of fatigue to keep the aircraft in the air.

The most important subject discussed in this number is "Air Strategy," which has been entrusted to Wing-Commander A. G. R. Garrod. He demonstrates conclusively that "Air power cannot be split up into the air power of the sea and the air power of the land." He, perhaps naturally, does not think it necessary to add that naval power and military power, though each of them is distinct from air power, each needs an air element of its own to be used for its own purposes, and that without that element or arm it is itself incomplete. His views on the comparative values of bomber squadrons and fighter squadrons are the accepted air force views, and do not coincide with those of General Ashmore. Possibly future and more elaborate air exercises will throw more light upon this interesting problem. Extremely instructive are the notes of Wing-Commander T. L. Leigh-Mallory on "Co-operation Between the Army and Royal Air Force during 1929," and they emphasise the necessity of specialisation by the army air squadrons.

But for general interest the most fascinating article in the issue is entitled "Transjordan: An Ancient and a Modern Raid," by Group-Capt. L. W. B. Rees, V.C. While flying over Arabia, Southern Palestine and Transjordan the writer studied the story of the Exodus of the Israelites from Egypt and mapped out what he believes to have been the route of Moses and Joshua. He comes to the conclusion that the historical part of the Book of Exodus is extremely accurate. He gives plausible reasons for the destruction of Pharaoh's army, and locates for himself the scene of the giving of the Commandments, of the discovery of manna, etc. The modern raid which he mentions is that of Col. Lawrence, and he deals with both "raids" geographically as the country unfolded itself to the eye of an airman.

It is impossible to mention all the good reading matter in this quarterly. We can only say that if the standard of the first issue is maintained, no mess, no club and no public library can afford to be without it.

F. A. DE V. R.

\* *The Royal Air Force Quarterly*. Vol. 1, No. 1. Edited by Sqdn.-Leader C. G. Burge, O.B.E. (Gale and Polden, Ltd. 7s. 6d. net, per post, 8s.)

### A Forthcoming Banquet

THE Royal Aero Club, in conjunction with the Royal Aeronautical Society, the Air League of the British Empire, and the Society of British Aircraft Constructors, will hold a banquet at the Savoy Hotel, London, on Wednesday, February, 1930, at 7.30 for 8 p.m. H.R.H. the Duke of York has graciously consented to be present, and the Chair will be taken by the Right Hon. Sir Philip A. G. D. Sassoon, Bart., the Chairman of the Royal Aero Club.

Presentations will be made to the Schneider Team, and Certificates of Performance in connection with World's Speed

Records will be presented to Supermarine Aviation Works, Ltd., Rolls-Royce, Ltd., the Gloster Aircraft Co., Ltd., and D. Napier & Son, Ltd., and to the pilots—Sqdn.-Ldr. Orlebar, Flying Officer Atcherley, Flying Officer Waghorn, and Flt.-Lieut. Stainforth.

The Gold Medal of the Royal Aero Club will be presented to Capt. C. D. Barnard, and an illuminated address to the Duchess of Bedford, in recognition of their flight from England to India and back.

The price of tickets (exclusive of wines, etc.) is £1 1s. Members may be accompanied by ladies.



# PRIVATE FLYING AND CLUB NEWS

THE HAMPSHIRE AEROPLANE CLUB had a total, at the end of 1929, of 438 members on the books, as against 400 at the end of 1928. Actually, 120 new members joined, but there were a number of resignations, owing to members leaving the district, etc.

Total hours flown were 1,674, which is an increase of 106. Dual flying went up from 720 hrs. to 800 hrs.; 37 members obtained their "A" licences, as against 26.

In April, a Simmonds Spartan (Cirrus III), and in August a Gipsy Moth were purchased. One of the original Moths was sold. There are now four machines in operation, a Gipsy Moth, a Cirrus Moth, an Avian, and a Spartan.

During the spring, the club arranged two broadcast talks on flying matters from the Bournemouth station, the first by a Vice-President, Lady Bailey, and the second by their first *ab initio* trained woman pilot, Miss A. B. Grace. On July 15 the Club again undertook the organisation of the control at Hamble for the King's Cup Race.

For the Schneider Trophy Contest in September, the aerodrome was handed over to the Aviation Department of the Automobile Association for the necessary arrangements regarding parking of visiting aircraft and club members were thereby enabled to view the contest from a steamer.

Flt.-Lieut. F. A. Swoffer, our Chief Instructor, left to take up a post with Wilson Airways, in Kenya, at the end of August. Before leaving, he had the satisfaction of knowing that, with the assistance of Mr. W. H. Dudley, the whole of the Government subsidy of £2,000 had been obtained during the financial year which ended on July 30. Mr. Dudley has been appointed to succeed Flt.-Lieut. Swoffer.

The Fourth Annual Dinner was held on December 6, and was easily the most successful of these functions in the history of the club, over 150 being present.

THE NORTHAMPTONSHIRE AERO CLUB will hold their annual ball at the Salon de Danse, Northampton, on January 24, at 9 p.m. The Savoy Hotel Band will provide the music, and tickets, price 12s. 6d. (inclusive of supper) may be obtained from Mr. C. A. Reading, Braemar, Christchurch Road, Northampton.

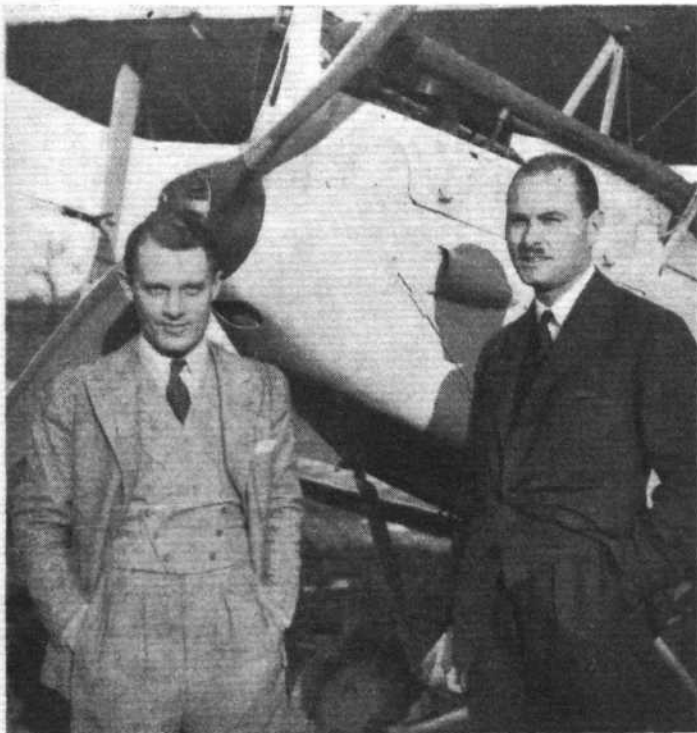
THE BERKS, BUCKS AND OXON AEROPLANE CLUB, although they only started late last year were able to turn out nine "A" pilots. N.F.S., who are running the club, now have two Moths (Cirrus III), at Reading, and this year it is proposed to increase this number to five, as well as a Desoutter (Hermes) for taxi work.



LIEUT.-COMMADR. GLEN KIDSTON, R.N., seen above, has soon taken to the air again, after his rapid recovery from the crash in a Junkers, near Godstone. It will be remembered that he showed great presence of mind and considerable pluck by going to Croydon immediately after the accident, and going up in a machine, in order to keep his nerve. Now, he is first taking part in the Monte Carlo Rally, for which he will be driving his Bentley from John 'O Groat's, and then he will be going on to Aboukir, to start on a trip to Kenya. His Moth G-AAJV has been equipped with an "Eagle" aircraft camera and a special silencer has been fitted, so that the exhaust noise will be deadened, in order that animals which he wishes to photograph may not be prematurely startled. He will fly south to Kenya from Aboukir, and his trip, which will take about three months, will be for shooting, as well as photography.

MR. MAN MOHAN SINGH is the latest recruit to the ranks of those who are attempting long-distance flights at an early stage in their flying career. Mr. M. M. Singh has obtained his pilot's certificate at Bristol, where he has been a student at the University and, now having bought a Moth (Gipsy), he hopes to leave for India, shortly, in an attempt to win the Aga Khan prize for the first flight to India by an Indian. His Moth has been fitted with an extra 20-gallon fuel tank, which gives the machine a range of about 740 miles. He proposes to follow the outward-bound Indian Air Mail liner so long as the navigation presents any difficulties. Last Friday, his machine was christened "Miss India," by the Maharani of Cooch-Bihar, whom we see on the left, in the act of breaking a bottle of champagne on the propeller boss.





[FLIGHT Photo.]

**A**BOVE we see Mr. F. E. N. St. Barbe (left), the business manager of De Havilland's and Mr. R. A. Loder, the General Manager of D.H. Aircraft of Canada. Mr. Loder will be remembered for the wonderful publicity campaign with which he heralded the advent of the "Moth," when he was in charge of that side of the firm at Stag Lane, and he has recently been on a short visit to this country. The Canadian factory is going ahead under his direction, and has moved into new quarters at Sheppard Avenue, about 3 miles north-west of Toronto. They are now completely assembling "Moths" from parts sent out to them instead of just assembling the covered units to the finished fuselage, as they have done until recently. The new factory is in a very well chosen site with a road running along the north side of the aerodrome and the railway along another side, with a branch line to their own wharf. The engine test shop has been arranged so that it is some little way from the main buildings and offices, so as to mitigate the noise nuisance as much as possible. A small design staff has now been engaged and skis of a new design have been got out, which allow the easy attachment of wheels to short stub axles in order to facilitate handling on the ground.

**T**HE BRISTOL AND WESSEX AEROPLANE CLUB managed to get in 26 hrs. flying, although only 8 days in December were sufficiently calm. The bad weather has also held up the work on the Bristol air port, so that neither the aerodrome nor the club house are ready, as had been expected. The club will be remaining at Filton till the end of this month, by which time it is expected that the new aerodrome will be ready. They have already started on the arrangements for organising the Air Pageant which they are running for the City of Bristol on May 31 next.

**T**HE NEWCASTLE-UPON-TYNE AERO CLUB have had a fairly successful year in spite of a certain reluctance on the part of the local youth to learn to fly during weather which could not be called ideal, however, a total of 1,242 hrs. 32 mins. were put in, and 24 licences qualified for, of which 3 were "B" licences. They were able to achieve extreme success at the Grosvenor Cup meeting, when they carried off all three trophies themselves, notably the Grosvenor Cup, the S.B.A.C. Challenge Cup and the Air League Challenge Cup and, moreover, did it with the same rather ancient "Moth" with a "Cirrus II" engine. This machine has since, unfortunately, been completely written off, leaving the club once more with only two machines.

**T**HE AMERICAN-BUILT "GIPSY" ENGINE has recently passed its Department of Commerce type test, this necessitates a 50-hr. test on similar lines to our own A.M. test. The brake horse-power at the beginning of the test was 100 and at the end 99.6, and on stripping down, everything was found to be in good condition. An interesting

fact is, that in order to suit the convenience of American aircraft constructors, the engine has had to be redesigned to rotate in the reverse direction to our English "Gipsy." Wright's, who are manufacturing the engine under licence in the States, now expect to be able to exploit it on a large scale.

**B**EKESBOURNE AERODROME, near Canterbury, a former Royal Air Force station, has recently been acquired by the Kent Aircraft Services, a new company having its headquarters at Folkestone. This company has, at the present time, 22 machines, which are intended for use later in connection with an extensive "joy-riding" scheme, and it is also proposed to form a Flying Club. The company has a large hangar available for the storage of private aircraft. New workshops have just been completed and the Kent Aircraft Services are in a position to carry out repairs and reconditioning, as well as supplying any type of new aircraft.

**T**HE CINQUE PORTS FLYING CLUB, though they have never had more than two machines in commission, managed to pile up a total of 2,120 flights, which represents 867 hrs. 45 mins., or approximately, 65,000 miles flown, for the past year. It speaks well for their ground organisation that the two "Moths" ("Cirrus II") were able to keep pace with this intensive flying without giving trouble. Twenty-one "A" licences were obtained in the same period.

**W**E publish this week a summary of the year's working of some of the Flying Clubs, and we hope to publish more as we receive them. All live club secretaries are asked to send in their reports as soon as possible as, when all have been received, a table will be compiled by means of which a comparison can be made of the hours flown, licences gained,



One of the latest Junkers Junior all-metal machines which has been fitted with an 80/88 H.P. Armstrong Siddeley Genet engine.

and so on, which should prove of great interest to those club members who are keen to see their club progressing. Club secretaries are reminded that we shall always be glad to consider for use any really interesting items which they think will interest others besides their own members; this page has long been provided for such news, but if one is to judge from the amount of material sent to the editor, then one must think that, with few exceptions, publicity of the club doings is the last thing that they wish for. We are well aware, however, that this is not so, if only from the number of letters we receive and we feel sure that if those responsible will consider the matter they will find a mass of happenings and news which would be of great interest to the members of other clubs.

After all, this is not a very great deal to ask! If those responsible for the dissemination of news would only say to themselves, "Now, what are the things which interest us in connection with other clubs?" they would then very soon hit upon numerous items which had, probably, previously escaped their notice or had not appealed to them as of sufficient interest to mention.





# AIR TRANSPORT

## THE "EMSCO" CHALLENGER

### A Recent American Air Transport 'Plane

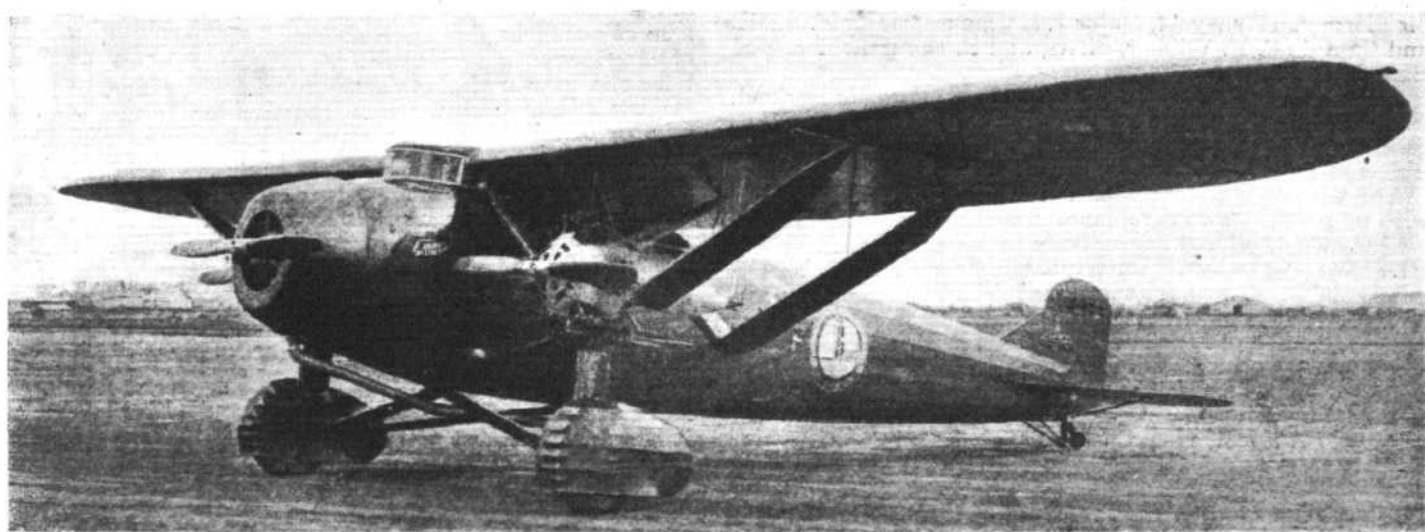
**W**E show in the accompanying illustration a recent American commercial monoplane, known as the "Emsco Challenger," produced by the Emsco Aircraft Corporation, of Downey, California. It is an eight-place cabin high-wing monoplane fitted with three 170 h.p. Curtiss "Challenger" engines.

The wings, of wood construction fabric covered, are mounted on top of the fuselage, and braced to the bottom longerons of the latter by two pairs of struts

provided with side windows. Access to and from the cabin is by way of a door in the side of the fuselage.

One of the three Curtiss "Challenger" engines is mounted in the nose of the fuselage, the other two being located on each side of the latter, carried by steel tube mountings beneath the wings and attached to the front wing struts. The "Challenger" engines, it may be added, are of the six-cylinder air-cooled radial type.

The undercarriage, which is of distinctive design, is of



THE "EMSCO CHALLENGER": A New American Three-engined eight-seater commercial monoplane, fitted with 170 h.p. Curtiss "Challenger" engines

with aerofoil-section fairings. The wings are of fairly thick section and have long narrow ailerons inset in the trailing edge.

The tail surfaces are of steel tube construction covered with fabric, and both rudder and elevators are balanced.

Steel tube is employed in the construction of the fuselage, which is actually of rectangular cross-section, but is faired to an oval section externally and covered with fabric. The pilot's cockpit is located high up at the leading edge of the wings and is completely enclosed by a windscreen-hood. Behind is the passengers' cabin, in the fuselage, which is

the divided type, consisting of two V's hinged to the fuselage, and each carrying a single wheel with an "Aerol" oleo strut attached below the wing engine mounting. Each wheel is fitted with Bendix brakes, and is enclosed in streamline "mudguards."

The principal characteristics of the "Emsco Challenger" are as follow:—Span, 57 ft.; overall length, 36 ft.; wing area, 483 sq. ft.; weight empty, 3,362 lbs.; weight laden, 5,400 lbs.; pay load, 1,190 lbs.; weight per sq. ft., 11.2 lbs.; weight per h.p., 10.6 lbs.; speed, 130 m.p.h. (max.) 100 m.p.h. (cruising); cruising range, 500 miles.

#### Sydney-Brisbane Service Opened

CAPT. KINGSFORD-SMITH and Mr. Ulm, who have formed Australian National Airways, Ltd., inaugurated the air service between Sydney and Brisbane on January 1. Capt. Kingsford-Smith flew north and Mr. Ulm flew south; the latter, however, made a forced landing *en route*. The machines used on this service are Avro (Lynx) 10 monoplanes.

#### Indian Air Mail

ON December 30 an air mail line between Delhi and Karachi was started. The service commenced with the flight of a Hercules (3 Jupiters) from Delhi to Karachi via Jodhpur. This is the first internal air mail service in India since the abortive attempt in 1919 to run a service between Karachi and Bombay with D.H.10 twin-engined bombers. The new service will doubtless be extended shortly from Delhi to Calcutta and then on to Rangoon.

#### Sir Alan Cobham's Flight

SIR ALAN COBHAM, who is flying the D.H. "Giant Moth" *South of Britain*, to Rhodesia in connection with the surveying of the Imperial Airways Cape-to-Cairo air route, made a forced landing at the new aerodrome at Upika (Northern

Rhodesia), where the machine was bogged for three days. Sir Alan was able to proceed later, however, and reached Bulawayo on January 6. He arrived at Salisbury on January 7, and handed over the machine to Imperial Airways' survey party. Sir Alan is proceeding by train to Cape Town, where he will join Lady Cobham.

#### Far North Air Service

Two aeroplanes of Canadian Airways, Ltd. (Canada) successfully concluded, on January 3, the first round air mail service between Edmonton and the North-West Territories. The two machines left Edmonton on December 8, and covered some 2,000 miles to Aklavik in the north.

#### A New Australian Airport

HEALESVILLE AERODROME, Victoria (about 30 miles east of Melbourne), Victoria, was opened on November 20 last.

#### Northern Air Transport Moves

NORTHERN AIR TRANSPORT, LTD. (Northern Air Lines, Ltd. and Berkshire Aviation Tours, Ltd.), has moved from the temporary aerodrome at Northenden to the airport of Manchester, Barton,

# AIRISMS FROM THE FOUR WINDS

## R.A.F. Flight to the Cape

EACH year a formation of R.A.F. aeroplanes from the Middle East Command undertakes a flight to Capetown and back as a piece of routine work. Usually this task has been entrusted to one of the bomber squadrons stationed at Cairo or Khartoum. This year, however, according to Reuter's Cairo correspondent, No. 14 Bomber Squadron stationed at Amman in Transjordan, has been chosen by Air Vice-Marshal Scarlett to carry out the flight. This squadron is still equipped with the obsolescent D.H.9A type, which, however, is quite up to the work. The flight will be commanded, it is stated, by Flight-Lieut. Cyril B. Greet, and Air Commodore Andrew G. Board, C.M.G., D.S.O., chief staff officer of the Middle East Command, will accompany the flight. The start will be made from Amman on January 11.

The South African Air Force now always co-operates in this flight. This year a flight from that force will join No. 14 B.S. at Pretoria on the return journey and will accompany it as far back as Cairo. In previous years the S.A.A.F. has not come farther north than Khartoum. The South African officers who will take part in this flight are:—Major-General A. J. Brink (Chief of the General Staff), navigator; Colonel Sir Pierre van Ryneveld, Major J. Holthouse, Major H. Daniel and Captain C. E. Wilmot, pilots, and three mechanics.

## Search for Lieut. Eielson

THE search for Lieut. Eielson and his mechanic Borland, who have been lost in the Arctic since November last, continues. Mr. J. Crosson has been making flights from the icebound motor-ship *Nanuk*, in the vicinity of North Cape, where the airmen were reported to have been heard, but with no result. Two aeroplanes also left Fairbanks, Alaska, on January 4, piloted respectively by Capt. T. M. Reid and Mr. Matt Niemenen. Unfortunately, Capt. Reid is now missing also. The Soviet trading ship *Stavropol*, which is icebound not far away from the *Nanuk*, is sending out dog teams in search of Lieut. Eielson.

## Liverpool Marine Airport Approved

THE Air Ministry has approved, with the concurrence of the Commissioners of Customs and Excise, of the following area at Liverpool as a Customs "aerodrome" for marine aircraft carrying only passengers and light baggage. That

portion of the River Mersey bounded on the north by Rock Ferry Pier (Lat. 53° 22' 30" N., Long. 2° 59' 45" W.) on the west bank and by a line running true east from the pier, and on the south by a line running true west from a position in Garston Docks (Lat. 53° 21' N., Long. 2° 54' 30" W.) on the eastern bank.

## Sir Geoffrey Salmond Tours India

EARLY in December Air Marshal Sir Geoffrey Salmond, A.O.C. India Command, left Delhi in a Wapiti, accompanied by a Hinai to make an air tour of India, which was to last for some three weeks. It was a pioneering tour by the Air Marshal, rendered somewhat complicated by the paucity of landing grounds in central and southern India. It is, in fact, recognised that R.A.F. aeroplanes must be allowed to land on military parade grounds when no other landing ground is available. This privilege is denied to civil aircraft. Down the Malabar coast, where the range of the Western Ghats runs, it would be extremely difficult to lay out a landplane route, though a seaplane route would be an easy matter. Looking back to the days of the Moplah rebellion in 1920 or thereabouts, one reflects how the task of the troops would have been simplified if they had had the help of seaplanes working from one of the harbours. Details of Sir Geoffrey's tour have not yet reached this country; but it is known that on December 4 the Hinai was in Madras and took H.E. the Governor, Lord Goschen, and a number of notable citizens of Madras up for a flight. The country was flooded at the time, and the distinguished passengers found the view from the air extremely beautiful.

## Baron Rothschild's Aerial Hunt

LIEUT. MITTELHOLZER, the Swiss pilot who is carrying out an aerial hunting expedition in Africa with Baron Rothschild, recently made the first flight with a passenger over Mount Kenya.

## New Member of Air Council

THE Air Ministry announces that the following appointment will take effect as from January 1, 1930:—Air Vice-Marshal Cyril Louis Norton Newall, C.B., C.M.G., C.B.E., A.M., Deputy Chief of the Air Staff, to be an additional member of the Air Council.



Sir Sefton Brancker piloted an Autogiro C.19, Mark II, on January 7th at Heston and made one take-off and one landing. He said that it was very easy to fly and gave him a great feeling of confidence. (FLIGHT Photo.)



## THE "THIRD ROUTE"

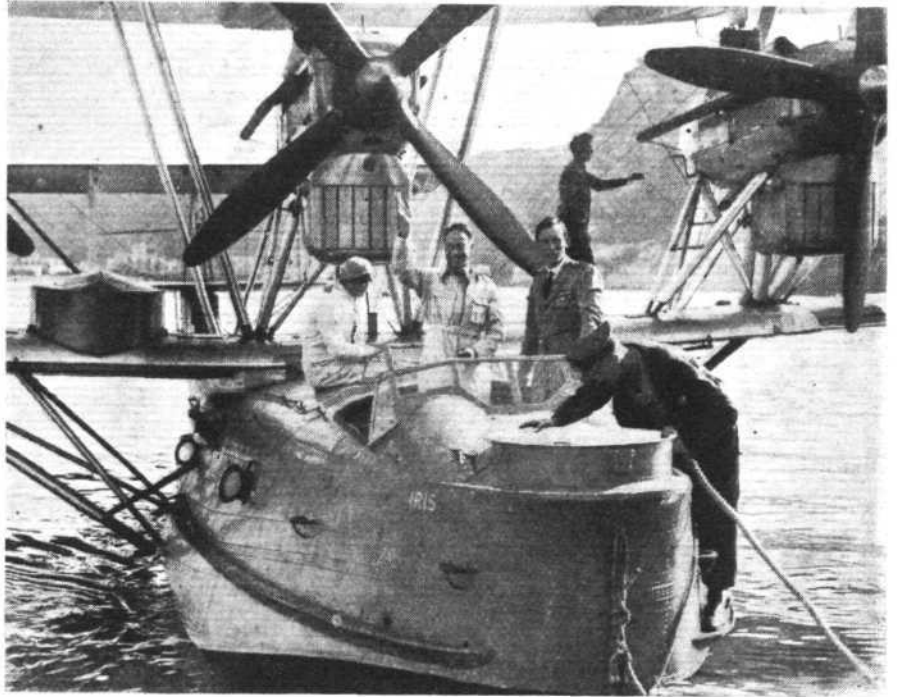
ON Friday, December 20, Sir Philip Sassoon gave one of the most interesting lectures that it has been our lot to hear. The subject was, of course, his trip to India in the "Iris" and which he has so ably covered in his book also entitled the "Third Route."

Sir Philip opened by saying that the subject he was to talk about might, to a certain extent, be ancient history to those who had had the pleasure of travelling over the same route by land, but even to them he felt sure that he would be describing what might be familiar scenes, from a novel aspect.

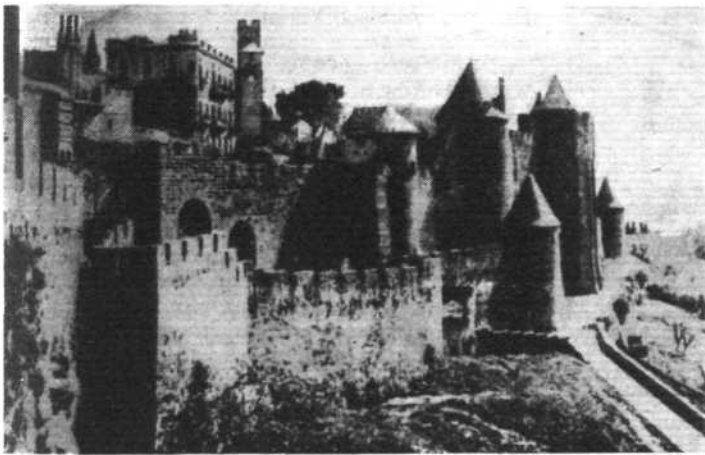
His object, he said, was not only to bring home to his audience the realisation that such outlying parts of the Empire had nowadays been brought comparatively close by the use of aircraft but also, through such realisation, to stimulate their interest in the development of Empire Air Routes.

The trip included visits to R.A.F. stations in Egypt, the Sudan, Transjordan, Iraq, India, and Malta and was packed with pleasurable experiences from beginning to end.

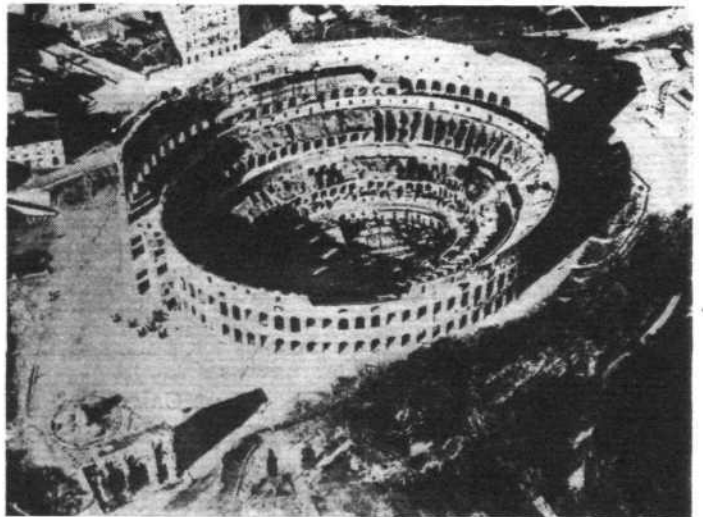
The lecture was illustrated throughout with a very fine set of lantern slides, which amplified the spoken word in bringing home to the audience the stupendous beauty of many of the ancient remains and cities when



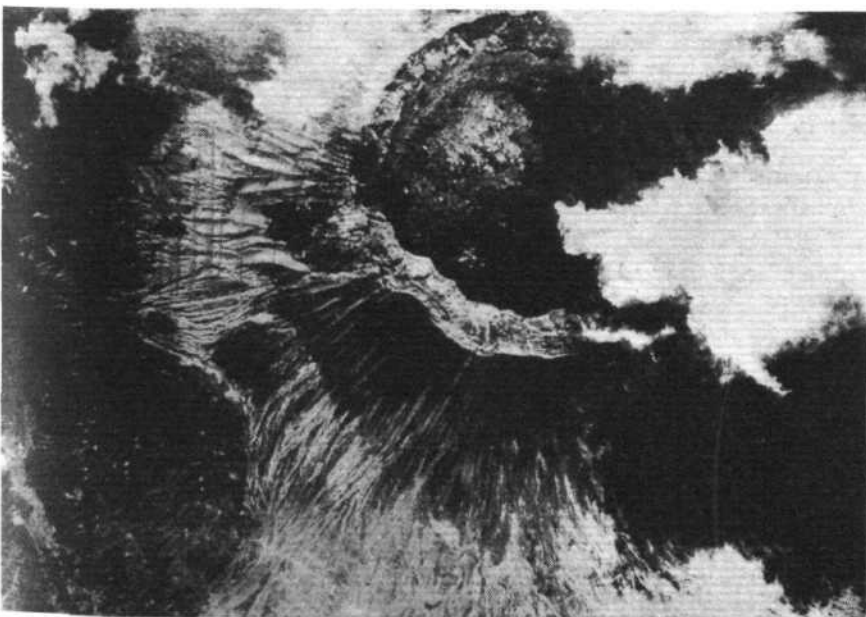
The return of the "Iris." (P. & A. Photo.)



Carcassonne, with its old-world battlements.



The Colosseum at Rome.



A wonderful vertical view looking into the crater of Vesuvius.

seen from the air, as compared to the view obtained by the ordinary tourist on the ground.

After a series of slides showing the "Iris" on the water, and in the air, and a short description of her, the lecturer started the trip proper from Plymouth which he left with a covering of the proverbial Channel fog, soon, however, this cleared and after passing the Channel Islands was able to fly down the coast of Brittany past the sardine fishing boats in sunlight. In the "Bay" the passengers of the "Iris" were able to travel in comfort while looking down feelingly on several ships, as the latter were tossing about considerably.

The first stopping place was Lake Hourtin, the seaplane base of Bordeaux, which is a large sheltered fresh-water lagoon. After refuelling the next flight was 250 miles across to Marseille. On the way over the air became very bumpy due to the varied formation of the ground and the hot sun, which made this part of the trip very uncomfortable. Many interesting places were passed on this crossing, Toulouse; Carcassonne, whose battlements can be seen to great advantage

from the air; Aigues Mortes, whose defences were a great contrast to those of Carcassonne and so on to Lake Berre, the seaplane base of Marseille which was reached just before dark.

Early next morning a start was made for Naples. The colouring of the islands of Hyeres has to be seen to be believed, and they were seen to perfection as they formed the turning point and the "Iris" was headed for the northern end of Corsica after which Elba and then the coast of Italy were reached. On the way a distant view of Rome was obtained, and finally Naples, which is a magnificent panorama from the air, came into sight. The following morning Vesuvius was visited and a flight made over the crater, a really wonderful sight, similarly Pompeii, when seen from above, at once assumes all the form of an ancient city, which is so very much more than can be seen from the ground and after a turn round the bay of Naples the course was set south and soon Stromboli came in sight, with its crater smoking hard; after this the boat was turned across the "toe" of Italy and headed for Greece.

The first land seen was the islands of Cephalonia and Zante, and after having a glimpse of the Adriatic coast the course lay up the Gulf of Corinth past Missolonghi, Delphi, Helicon and Parnassus and so via Salamis to Piræus. Sir Philip



The Parthenon—the West Front



The Citadel at Cairo

(R.A.F. Official. Crown Copyright reserved)

here did a little sight-seeing and visited the Acropolis, the Temple of Jupiter Olympus, the Arch of Hadrian and finally the Parthenon.

On October 2, 1928, Athens was left in the morning, and the "Iris" was headed across the Cyclades, past Rhodes, and so to Egypt, so that Sir Philip, who had breakfasted under the Parthenon, was able to have tea under the Pyramids.

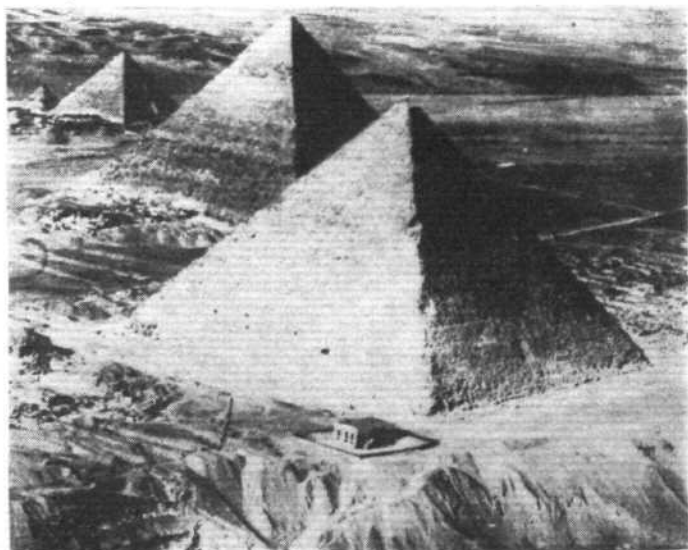
At Aboukir the "Iris" made her own way to Baghdad, while Sir Philip went by a Fairey III.F. to Heliopolis, the air station of Cairo. After a couple of days at Cairo, which were filled with a round of inspections of the headquarters of the Middle East Command, a visit was made to Khartoum. Before this, however, time was found for a few trips to some of the most interesting of the many things to be seen in the neighbourhood. The majority of these are vastly more majestic when viewed from the air, and slides were shown of the Pyramids; the Sphinx, which was already in need of repair when the Pyramids were being built; the Tomb of the Caliphs; and several views of the surrounding desert, both in the irrigated areas and outside, and also when the flood waters were up.

The lecturer enlarged a little upon the duties of the R.A.F. in Egypt, who from their central position are available to reinforce the forces at Aden, the Sudan, Palestine, Transjordan, Iraq, and even India. The Squadron in the Sudan is stationed at Khartoum, and on October 5 a flight of three Fairey III.F.'s took Sir Philip and his staff to visit them. The journey took two days each way, and was most interesting, laying as it did over the whole range of temples and monuments of Upper Egypt and following,

most of the way, the course of the Nile. At Abydos, the great Temple which Seti I built to Osiris gleamed white in the desert. Here the river was left for a while and a course taken straight across the desert to meet the river again below Edfu, where is the Temple of Horus, the falcon-headed God of the Rising Sun. Half-way to Aswan was the Temple of Kom Ombo, where they used to worship crocodiles. In those days they used to be fed upon butter and fresh fowls, but nowadays the crocodiles that are to be seen in the vicinity are treated with scant respect.

An interesting comparison with the ancient works is the mighty dam at Aswan which has been built by British engineers, to give more water to Egypt. This compares very favourably with the works of the Pharaohs, and much of its stone was hewn from the same quarries. The dam has turned Philae into an island, and much of the work of the Ptolemys and the Cæsars is to be seen here. One edifice which should be particularly noticed is the unfinished building known as Pharaoh's Bed.

Near Wadi Halfa the façades of the Rock Temples of Abu Simbel stand out; but they, although they are 33 ft. high, are dwarfed

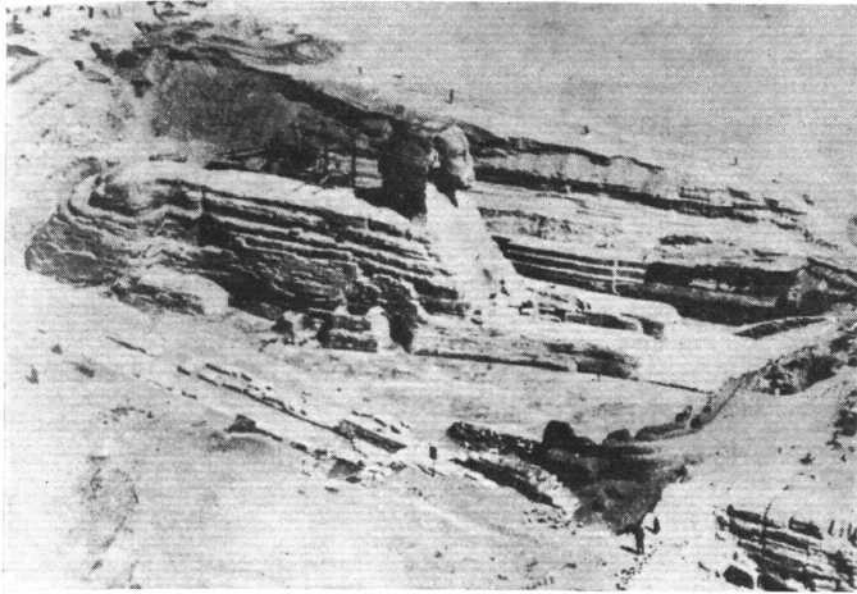


The Pyramids from above

by the 65 ft. seated figures of Rameses II on the façade of the Great Rock Temple, which are often said to be the most impressive sights to be found in Egypt.

After leaving Wadi Halfa the course lay along the railway





The Egyptian typification of enigmatical wisdom. The Sphinx showing the more recent excavations

line through 300 miles of desert, and after meeting the river again near Abu Hamed, Khartoum comes into sight.

Khartoum, with the old town of Omdurman on the opposite bank, is the administrative centre of the Sudan, and a view from the air which shows the original layout of the town in the form of a Union Jack, reminds one of its connection with Kitchener and Gordon. No. 47 Squadron, which is stationed at Khartoum, has an area four times the size of England to police; but, in spite of this size, it has been very successful in maintaining order. Two small wars have recently been found necessary against the Nuers, who are a very warlike people, clad chiefly in a large spear, and in these operations the R.A.F. were able to locate their strongholds in a very short time, and force a surrender, which would have entailed a long and costly siege by land methods, and this experience alone has more than eradicated any doubt which there may have been as to the efficacy of the R.A.F. for such work.

On October 8 the return journey to Cairo was started. This time the river was followed, and the remaining Egyptian temples seen. First came Thebes and the Great Temple of Amon at Karnak. Then the Temple of Ammon at Luxor, and both this and the

former cannot be appreciated in their entirety until they have been seen from the air. At Luxor were also the statues of Amenophis, known as the Colossi of Memnon. Back in Cairo it was interesting to review the amount that had been seen as incidental to an official visit when compared to the time it would have taken had the journey been done by the surface means of transport. On October 10 the journey was resumed to Transjordan and Iraq. The route lay across the Gaza Aerodrome, and on to Jerusalem, which shows up as a rather pale city, with its Mosque of Omar standing out as the most conspicuous feature. Following the road through the hills, Jericho was reached with the Tomb of Moses beyond it, and then by the head waters of the Dead Sea, a short journey across the mountains brought the machine to Amman. This is an important R.A.F. camp, and is situated in a very strategic position. The next step across the Syrian Desert to Baghdad was rather trying owing to the heat and sand, but it was well repaid when Baghdad came into sight in the rays of the setting sun, with the golden domes of Khadimain looking like the pictures we were shown in childhood, of the "Magic



The Tombs of the Caliphs

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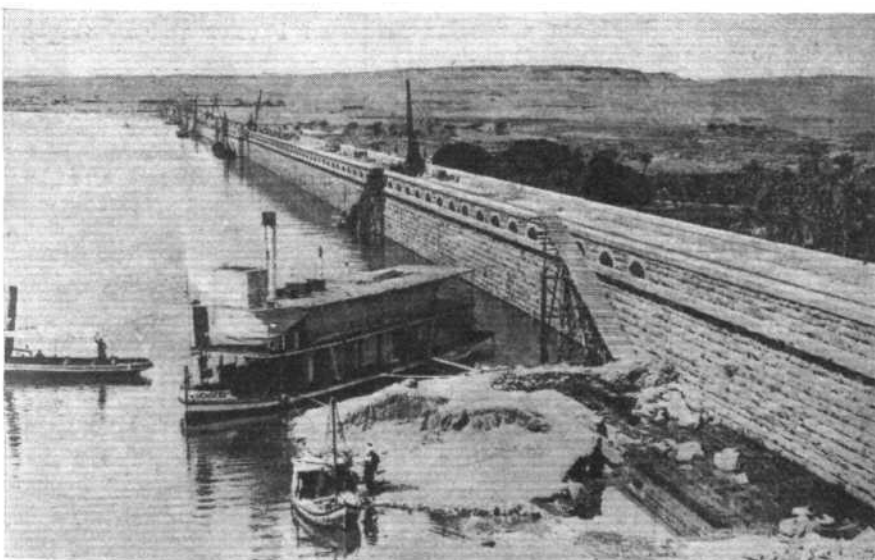
Carpet" exploits in the days of Haroun al Raschid. An impressive sight was the Bridge of Boats across the Tigris, and also the Bridge of Baghdad itself.

Baghdad is like so many Eastern cities, a mass of contrasts, and the admixture of beggars who rub their indescribably filthy selves against well-dressed effendis in European clothes, and the beautiful mosques rising out of a welter of squalid noisomeness which cannot well be described. Its saving grace is the Tigris, which awakens so many memories of the past glories it has seen.

Iraq has been a proving ground for the effectiveness of the R.A.F. method of policing large areas, and so successful have they been that the large infantry forces previously maintained have been dispensed with and the cost of the administration reduced from twenty millions per year to about one and-a-half.

After an inspection of Hinaidi R.A.F. station, a start was made for Basra in a "Victoria" troop-carrying machine, which is the same type as was used to evacuate the foreign residents of Kabul not very long ago.

*(To be continued.)*



The Aswan Dam, acknowledged to be one of the engineering wonders of the world.

## CORRESPONDENCE

[The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.]

### INTERNATIONAL COMPARISONS

[2258] In connection with Mr. W. R. Andrews' letter on this subject (No. 2255) it is interesting to note that my Curve A originally consisted of two separate curves, one for high-lift wings and one for low. About 8 or 9 years ago, when high-lift wings began to be used, it was found that the low-lift curve seemed to suit all types (so far as *gain of height per distance* goes). Later, when lift-increasing devices came to be used—flaps and so on—this became so evident that it was necessary to discard the high-lift curve and to find the reason for so doing. The reason is really quite simple. If a high lift is made use of when climbing, the large increase of induced drag defeats its object and it is found better (for screen clearing purposes) to fly at an ordinary sort of angle.

There are three factors all tending to produce this result:

- (1) The increased induced drag incurred by flying at the larger angle which is necessary to get the high lift.
- (2) The decreased propeller power at the lower speed.
- (3) The fact that the difference between "low lift" and "high lift" wings seems smaller on the full scale than was thought. It seems quite difficult to make a wing give a lower maximum lift coefficient than about 0.6.

The surface loading is then the best all-round criterion for this particular evolution of clearing the screen, although it must be realised that some compromise is necessary in trying to express things generally. Extremes of aspect ratio, for example, would affect the accuracy of this diagram much more than differences of maximum lift coefficient.

I may add that the point P on my diagram represents a modern and wholly American machine, which I believe is a very good aeroplane.

The De Havilland Aircraft Co., Ltd., C. C. WALKER.  
Stag Lane Aerodrome.  
January 8, 1930.

### MODELS

[2259] I was extremely interested in Mr. Neville's letter No. 2253 in a recent issue of FLIGHT, and join with him in his desire to see a revival of articles on Model Aeronautics.

In the meantime I am sending two photographs of a plane I have made by an entirely new process in the hope that it may be of some interest to you and the readers of FLIGHT. I have been experimenting with this process for some years and have recently patented it.

The model itself is still rather crude, but I am at present having machinery made which will improve things considerably.

A few particulars may be of interest: Overall length, 32 in., wing span 38 in., weight 14 ozs.

The motor is a two-gear one, driven by two strands of eight lengths of  $\frac{1}{4}$ -in. elastic.

A 12-in. Pegasus propeller is fitted and although, owing to the bad weather, a really successful flight has not been

obtained, with a wing loading of under 9 oz., it will be seen that flying is quite possible.

Southport, Lancs.,  
December 30, 1929.

J. N. MANSOUR.

[2260] *Apropos* Mr. Norman E. Neville's letter published in the December 27 issue of your excellent paper, I for one would appreciate a regular feature dealing with models as applied to aircraft. In view of the great importance of reduced scale experiments in aircraft research work, I feel sure such a course on your part will be a most valuable extension of the utility of FLIGHT.

In conclusion, may I ask if you, or any of your readers, can suggest a means for providing a steady supply of smoke which I need in order to carry out some experiments on air flow around certain bodies? Alternatively, perhaps, you can tell me of some other method which has been used successfully to indicate air flow. If possible, some idea as to the density of the air at various points, as well as the actual direction of flow, is required, and I had in view the projection of smoke from a series of fine jets, in the air stream, as a means of showing these conditions.

But the difficulty is to provide a steady supply of clearly visible smoke. I do not know whether an adaptation of the principle used in the case of sky-writing would serve, but it seems to me that a chemical method would prove simplest and most reliable.

Wishing you all success in the coming year, the 22nd year of publication of FLIGHT.

Thaxted, Essex, December 30, 1929. D. DE GUÉRIN.

[2261] Like your correspondent, Mr. Neville, I have looked in past issues of FLIGHT for articles on model aeronautics.

I am interested in aeronautics, both full size and model. The model part being the only way in which I can "give vent to my feelings," so to speak, I should welcome a regular "models" feature in your excellent journal.

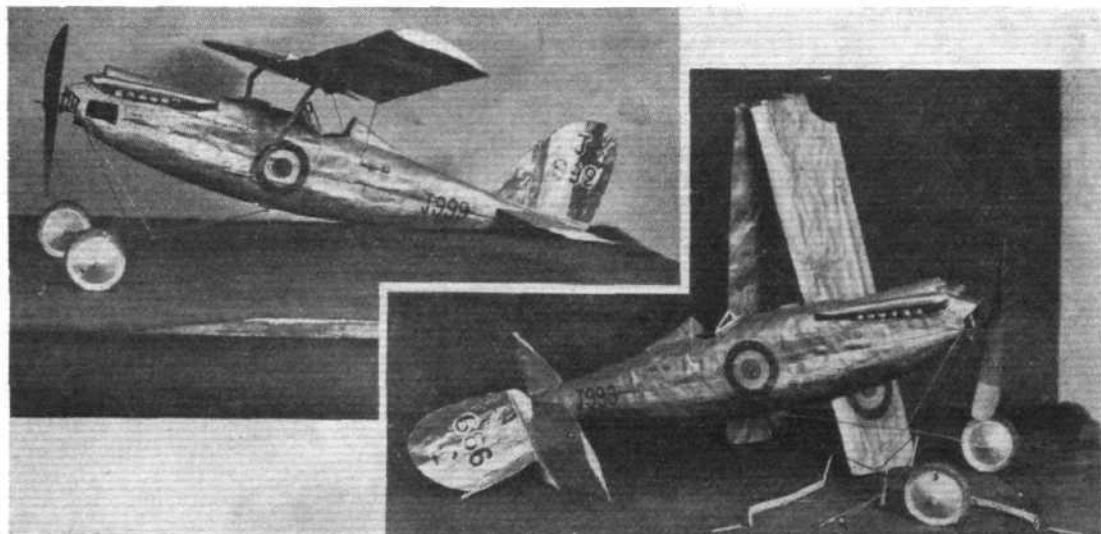
Chippenham, Wilts., December 28, 1929. THOMAS W. BUSH.

### A GRIEVANCE

[2262] May I, as one who has two flights, heartily endorse the grievance of Mr. A. Crosse. I am also very keen about flying, and would do anything to keep at it, but don't stand an earthly on account of the cost. I am trying to get the cash together to get an "A" licence, and when I have got it, what then? As Mr. Crosse says, why doesn't the Air Ministry give us a helping hand? We are air-minded enough. Only give us the chance. At present, to those of us who are really keen and willing to do anything to fly, or further the cause of aviation in any way, the whole thing is disheartening and hopeless. On behalf of wingless birdmen, I say with all my heart once again "give us a chance."

O. F. BUDINA, Royal Marines.  
P.S.—I am a regular reader of FLIGHT and thoroughly enjoy every page of it.  
Plymouth, December 18, 1929.

Mr. J. N. Mansour's  
model referred  
to above.





# THE ROYAL AIR FORCE

London Gazette, December 31, 1929

## General Duties Branch

Marshal of the Royal Air Force Sir Hugh M. Trenchard, Bt., G.C.B., D.S.O., D.C.L., LL.D., relinquishes his appointment as Chief of the Air Staff and Member of the Air Council (Jan. 1). Air Chief Marshal Sir John M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O., Principal Air Aide-de-Camp to the King, is appointed Chief of the Air Staff (Jan. 1).

Air Vice-Marshal T. I. Webb-Bowen, C.B., C.M.G., is appointed a Member of the Air Council as Air Member for Personnel (Jan. 1). Wing Commander P. C. Maltby, D.S.O., A.F.C., is appointed Director of Training (Temporary), Air Ministry, from Sept. 7, 1929, to Oct. 3, 1929, inclusive.

Marshal of the Royal Air Force Sir Hugh M. Trenchard, Bt., G.C.B., D.S.O., D.C.L., LL.D., on ceasing to be employed, is placed on half-pay (Jan. 1). Group Captain A. B. Burdett, D.S.O., is placed on half-pay list, scale A (Jan. 1). Air Vice-Marshal F. C. Halahan, C.M.G., C.B.E., D.S.O., M.V.O., is placed on retired list at his own request (to accelerate promotions) (Jan. 1). Squadron Leader A. J. Currie is placed on retired list (Dec. 30, 1929). Flight-Lieut. F. L. Woledge resigns his short-service commn. (Dec. 31, 1929). Flying Officer F. B. Tomkins is transferred to Reserve, Class A (Dec. 23, 1929).

The short-service commissions of the following Pilot Officers on probation are terminated on cessation of duty:—G. L. S. Marsh (Dec. 31, 1929); R. R.

Chapman (Jan. 1). Flying Officer J. L. B. Stevinson (Lieut., R. Tank Corps) relinquishes his temp. comm. on return to Army duty (Dec. 18, 1929); Lieut. H. R. M. Nicholl, R.N., Flying Officer, R.A.F., relinquishes his temp. comm. on return to Naval duty (Dec. 30, 1929); Lieut. E. O. F. Price, R.N., Flying Officer, R.A.F., ceases to be attached to R.A.F. on return to Naval duty (Dec. 9, 1929).

## Stores Branch

Squadron Leader C. M. Bevan is placed on retired list at his own request (Jan. 1); Flying Officer H. O. Fellowes is cashiered by sentence of General Court-martial (Dec. 18, 1929).

## Medical Branch

Flying Officer T. A. Edwards, M.B., resigns his short-service commn. (Dec. 31, 1929); Flight-Lieut. A. W. Comber relinquishes his temp. commn. on completion of service (Nov. 20, 1929).

## RESERVE OF AIR FORCE OFFICERS

### General Duties Branch

The follg. are granted commns. in Special Reserve as Pilot Officers on probation:—C. W. Lindsay (Nov. 8, 1929); F. B. Bristow (Nov. 13, 1929).

## PLACES SEEN FROM THE AIR

### Major Cochran-Patrick's Lecture at the R.G.S.

MAJOR C. K. COCHRAN-PATRICK, D.S.O., M.C., delivered the Christmas lecture of the Royal Geographical Society, on January 6, at the Aeolian Hall. The subject chosen was "Places seen from the Air," and the audience was very largely composed of schoolboys of all ages from 18 downwards. No audience could have been keener, or could have followed the points of the lecture with more intelligent interest; and at the end, a naval cadet proposed a vote of thanks for what he called "a splendid lecture."

Major Patrick said that, while probably most of his audience had been up in the air, probably none of them had flown high enough, far enough, or often enough to have become familiar with the airman's view of the earth. He explained the difference between low oblique, high oblique, and vertical photographs, and the part which each played

in making a map. He then took his audience round the world, within an hour, by means of 79 slides taken during his various survey expeditions. Major Patrick has enjoyed a very varied life during the last 10 years, having conducted surveys in many parts of the world. So, with the aid of his slides, he took his audience through the air, over Newfoundland, Bermuda, Trinidad, Venezuela, British Guiana, Rio de Janeiro, Burma, Northern Rhodesia, the Victoria Falls, the Sudan, Egypt, and Iraq. Some of the most beautiful pictures showed the harbour of Rio, and among the most instructive were those of British Guiana, Rhodesia, and Iraq. Major Patrick explained clearly how maps are made from air photographs, and set forth the advantages of that method. The audience showed its delight by frequent outbursts of applause.

## FUNERAL OF R.A.F. LONG-DISTANCE PILOTS

THE coffins containing the bodies of Squadron-Leader Jones-Williams, M.C., and Flight-Lieut. Jenkins, O.B.E., D.F.C., D.S.M., who were killed in the crash of the long-distance monoplane near Tunis, were conveyed to Marseilles on the SS. Duc d'Aumale, and thence transported to Southampton. The Air Council proposed to give the bodies a joint funeral with full Air Force ceremonial, but they deferred to the wishes of the relatives of Squadron-Leader Jones-Williams that he should be buried in the family burial ground at Newtimber Church, Hassocks, Sussex. Flight-Lieut. Jenkins was buried in the R.A.F. ground at Ipswich cemetery. The funerals took place on New Year's day.

The funerals were of a private character, but a Royal Air Force bearer party and firing party and two trumpeters were provided by No. 23 (Fighter) Squadron, Kenley, for the funeral of Squadron-Leader Jones-Williams, and by

No. 22 (Bomber) Squadron, Martlesham Heath, for the funeral of Flight-Lieutenant Jenkins. These are the squadrons with which the deceased officers were serving when they were detailed for long-distance flight duty.

The Secretary of State for Air was represented by Air Commodore F. V. Holt, C.M.G., D.S.O., Director of Technical Development, Air Ministry, at the funeral of Squadron-Leader Jones-Williams, and by Air Commodore F. W. Bowhill, C.M.G., D.S.O., Director of Organisation and Staff Duties, Air Ministry, at the funeral of Flight-Lieutenant Jenkins. Air Chief Marshal Sir John Salmond, K.C.B., C.M.G., C.V.O., D.S.O., A.D.C., Chief of the Air Staff, represented the Air Council at the funeral of Squadron-Leader Jones-Williams, and Air Marshal Sir John Higgins, K.C.B., K.B.E., D.S.O., A.F.C., Air Member of Council for Supply and Research, was the representative of the Council at the funeral of Flight-Lieutenant Jenkins.

### Capt. Hugh Grosvenor Killed

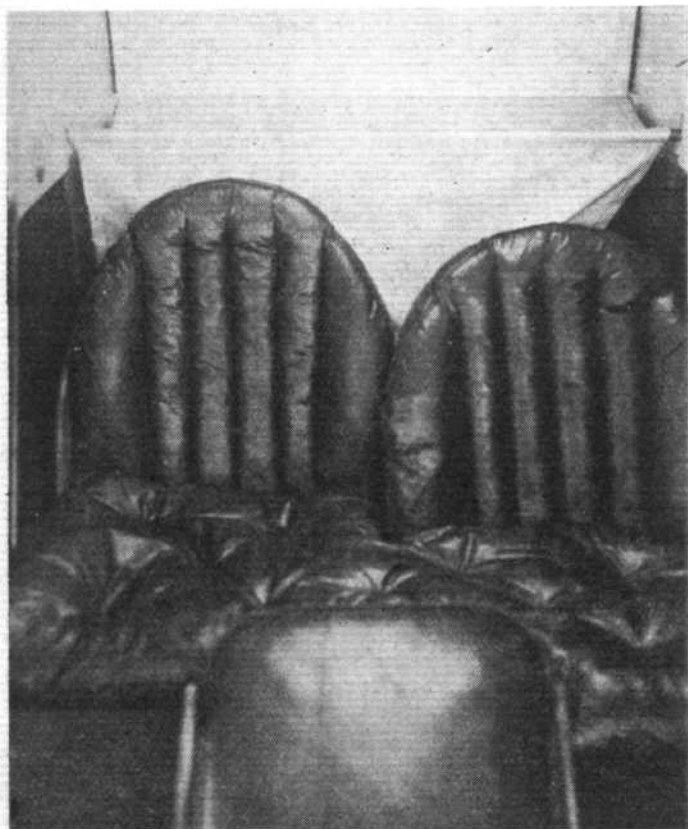
A REGRETTABLE flying accident occurred in Australia on January 6, in which Capt. Hugh Grosvenor, heir of Lord Stalbridge, Flight-Lieut. F. A. Briggs, R.A.A.F., and L.A.C. D. C. Ewen lost their lives. Flight-Lieut. Briggs, accompanied by Capt. Grosvenor and Aircraftsman Ewen, had set out from the Australian Flying School at Point Cook for a short trip in the No. 2 Wackett "Widgeon" amphibian flying-boat, and it was when they were returning that the machine nose-dived from a height of about 400 ft., about one mile from shore. The flying-boat, which struck the water with considerable force, immediately sank, but when the wreckage was recovered the following day no trace of the bodies was found. Capt. Grosvenor, it will be remembered was about to undertake a flight from Australia to England.

### Death of Mr. A. E. Owen

It is with deepest regret that we have heard of the death of Mr. A. E. Owen. Mr. Owen was the proprietor of Rubery Owen, Ltd., a firm established in 1884, which specialises in a very wide range of products from complete factory buildings and bridges, down to bolts and nuts for aircraft. Mr. Owen was always a man of vision, and he started the aircraft component side of his business some 20 years ago, since which time it has steadily grown until it now is almost pre-eminent in this particular field and large developments are under way at the Darlaston works to house this branch. He passed away on December 30, at a nursing home in Sutton Coldfield, where he has been under treatment for some few weeks, and will be sadly missed by all those who were fortunate enough to know him.

## A DESOUTTER IMPROVEMENT

MR. DESOUTTER has shown that he is out to study all the wants of the users of his Desoutter (Hermes) Sports Coupe, by promptly rectifying any small inconveniences as they are found. A case in point is the passenger's seat; this, until recently, was in the form of a single seat across the fuselage for the two passengers, and the padding (?) thereof felt almost incompressible; this was no doubt due to a desire to keep the weight of the machine down, or to some such perfectly justifiable cause, but its effect on one's anatomy was not justifiable! Now, however, the most fastidious will have no cause to cavil at the machine on this score. The padding is just right, and makes the seats the most comfortable it has been one's fortune to fly in. The backs of the seats might, perhaps, be sloped a trifle less for



most people, but that is a very minor point when compared with the vast general improvement over the seats provided in most other light aircraft. For those who are contemplating making their first flight, but who have been somewhat deterred by the thought of being blown and bumped about in the open type of machine, a flight in a Desoutter should prove the means of making them air-minded; for few machines offer such comfort and view as does this machine, and for those who are interested in flying as a means of transport, as opposed to a form of sport, there is no doubt that the Desoutter for its size, can hardly be beaten.

One point which may, perhaps, be criticised, is the pilot's seat. This has apparently been left of the same design as the old passengers' seats, and many pilots have been heard to wish that they themselves were better covered on the parts they sit upon!

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### For Luxor Goggles

MEYROWITZ, LTD., of 1A, Old Bond Street, London, W.1, have recently made an addition to their range of accessories suitable for use with their Luxor Goggles. This is a leather mask, which fits their Luxor No. 6 goggles and serves as a protection for the face when this is desired. The mask is silk lined and edged with plush, so that it should be both comfortable and durable. The price is 7s. 6d.

### Aeroplane Brakes

BENDIX-PERROT BRAKES, LTD., of Birmingham, inform us that they are receiving many inquiries for aeroplane brakes, together with a large number of orders from home and overseas manufacturers. One of the latest orders to be received is a substantial one from Société Anonyme Belge de Constructions Aéronautiques.

## PUBLICATIONS RECEIVED

*Wrought Alloys of Aluminium in Aircraft.* The British Aluminium Co., Ltd., Adelaide House, King William Street, London, E.C.4.

*The Brooklands School of Flying.* Brooklands School of Flying, Ltd., Brooklands Aerodrome, Byfleet, Surrey.

*Calendar, 1930.* Aerofilms, Ltd., Colindale Avenue, Hendon, London, N.W.9.

*The Aeronautical Diary, 1930.* Gale and Polden, Ltd., Wellington Works, Aldershot. Prices: 1s. 6d., 2s., 3s. and 7s. 6d.

*Chilton Aero Directory and Catalogue, 1929.* Chilton Class Journal Company, Chestnut and 56th Streets, Philadelphia, Pa., U.S.A.

*The Royal Air Force Quarterly. Vol. I. No. 1. January, 1930.* Edited by Sqdn.-Ldr. C. G. Burge, O.B.E. Gale and Polden, Ltd., Wellington Works, Aldershot. Price 7s. 6d. net. (post free, 8s.).

*U.S. National Advisory Committee for Aeronautics Technical Notes:* No. 316.—Wind Tunnel Tests on a Model of a Monoplane Wing with Floating Ailerons. By M. Knight and M. J. Bamber. Sept., 1929. No. 318.—Full Scale Investigation of the Drag of a Wing Radiator. By F. E. Weick. Sept., 1929. No. 319.—Some Experiments on Autorotation of an Airfoil. By S. Ober. Sept., 1929. No. 320.—The Drag and Interference of a Nacelle in the Presence of a Wing. By E. N. Jacobs. Oct., 1929. No. 321.—The Impact on Seaplane Floats during Landing. By Th. von Karman. Oct., 1929. No. 322.—The Effect of the Wings of Single Engine Airplanes on Propulsive Efficiency as Shown by Full Scale Wind Tunnel Tests. By F. E. Weick and D. H. Wood. Oct., 1929. No. 323.—Wind Tunnel Tests on Airfoil Boundary Layer Control Using a Backward Opening Slot. By M. Knight and M. J. Bamber. Oct., 1929. No. 324.—Wind Tunnel Tests on an Airfoil Equipped with a Split Flap and a Slot. By M. J. Bamber. Oct., 1929. No. 325.—Wind Tunnel Pressure Distribution Tests on a Series of Biplane Wing Models. Part II. Effects of Changes in Decalage, Dihedral, Sweepback and Overhang. By M. Knight and R. W. Noyes. Oct., 1929. No. 326.—Wind Tunnel Pressure Distribution Tests on an Airfoil with Trailing Edge Flap. By C. J. Wenzinger and O. Loeser. Oct., 1929. No. 327.—Some Studies on the Aerodynamic Effect of the Gap Between Airplane Wings and Fuselages. By S. Ober. Nov., 1929. The National Advisory Committee for Aeronautics, Washington, D.C., U.S.A.

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## AERONAUTICAL PATENT SPECIFICATIONS

*Abbreviations:* Cyl. = cylinder; i.c. = internal combustion; m. = motor. (The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

### APPLIED FOR IN 1928

*Published January 9, 1930*

32,772. W. A. D. FORBES. Apparatus for launching aircraft. (322,861.)

### APPLIED FOR IN 1929

*Published January 9, 1930*

15,980. H. JUNKERS. Rotors for centrifugal pumps. (314,519.)  
16,179. H. JUNKERS. Scaffolds or frames for use in assembling structures. (313,162.)

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